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ABSTRACT

This booklet was produced for teachers in the hope that the philosophy of multiple talents, and productive thinking will be an aid in the development of future citizens. In the introduction, Calvin W. Taylor discusses talents as the central focus in all classrooms, new tests for identifying important talents heretofore neglected, and the need of a multiple accountability system for assessing educational outcomes. Each section on divergent production, convergent production, evaluation, creativity, planning, communication, forecasting, decision making includes guidelines for recognizing and developing talents in that area. Talent development objectives with student activities are outlined, and related curriculum activities suggested. A lesson plan example and bibliography are appended. (VW)

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IGNITING CREATIVE POTENTIAL

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PROJECT

IMPLODE



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FOREWORD

Project Implode is designed to produce teaching materials and techniques that will turn on the learner and set off the productive thinking and multiple talent areas of the intellect. Through the use of experience exercises the talent areas are ignited, developed, and utilized giving the student a wider range of options and intellectual abilities with which to meet the changing future. The project goal has been to gather and create materials, techniques and strategies that will systematically develop the creative intellectual talent areas of each student.

Many of the materials and techniques employed in this project have been used for years by successful teachers. Our goals of in-depth talent training are unique, but the concept of teaching for thinking has always been a characteristic of the learning process.

Project Implode's basic premises are: that each child has a vast reservoir of intellectual talent which the present system is not tapping and that these talents can be recognized and developed, and that their application will help each student to become a more complete, productive individual.

PRODUCTIVE THINKING

"Divergent: a generation of information where the emphasis is upon variety, originality, and quality of output from the same source.

Convergent: is the generation of information from given information, where the emphasis is upon achieving unique or conventionally best outcomes.

Evaluative: reaching decisions or making judgments concerning the goodness, correctness, suitability, adequacy, desirability, etc., of information in terms of criteria of identity, consistency, and goal satisfaction."¹

TALENT AREAS

Creativity

1. Fluency
2. Flexibility
3. Originality

Planning

1. Elaboration
2. Sensitivity to Problems
3. Organizing Abilities

¹Guilford, J. P. Progress in the Discovery of Intellectual Factors. In C. W. Taylor (Ed.) *Widening Horizons in Creativity*. New York: Wiley & Sons, 1964, 261-297.

Communication

1. Expressional Fluency
2. Associational Fluency
3. Word Fluency

Forecasting

1. Conceptual Foresight
2. Penetration
3. Social Awareness

Decision Making

1. Experimental Evaluation
2. Logical Evaluation
3. Judgment

Academic

1. General School Curriculum as measured by achievement tests.

Project Implode is based on the research findings of:

Calvin W. Taylor

"The development of fully functioning individuals has long been an avowed objective of education. We believe that education in a democracy should help all individuals develop their talents fully — to become as nearly self-actualized as possible. To fully develop the intellectual capacities of our children and to lead them closer to self-actualization, the abilities involved in developing creative thinking and creativity cannot be ignored. The traditional measures of intelligence assesses only a few of man's intellectual talents. Man's complex mental operations are not being fully developed or assessed. Among them is his ability to think and act creatively."

J. P. Guilford

"The I.Q. is a fairly good index of whether or not a child will get good grades in academic subjects. So far as general intellectual assessment, it is pitifully limited."

E. Paul Torrance

"It now seems possible that many things can be learned in creative ways more economically and effectively than by authority. It appears that children can be taught in such a way that their creative thinking abilities are useful in acquiring educational skills, that these abilities are different from those measured by intelligence and scholastic

aptitude tests, and that they are important in mental health and vocational success."

Frank E. Williams

"If teachers are effectively performing their job in the right way, then it must be their responsibility to attempt to develop or release that amount of potential or human development which is there."

EDUCATIONAL PRIORITIES ARE:

1. To develop the desire and ability to think and solve current problems.
2. To help learners discover their own worth and the value of others.
3. To help learners develop their own unique set of talents and abilities.
4. To help students develop the skills of inquiry.
5. To help learners become disciplined and responsible for their own learning and behavior.

POWERS BEING DEVELOPED:

1. The power to EXPRESS
2. The power to RESPOND
3. The power to INTERACT
4. The power to QUESTION
5. The power to CREATE
6. The power to BE

(Adopted from Utah ASCD study)

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NOTE

One thing we can really count on in the future of education is change. It will either come from within (from educators) or without (from business and industry).

This booklet was produced by teachers. It is based on research compiled over many years. (The activities were developed and used in typical classrooms by a variety of teachers, kindergarten through college.)

This booklet is produced as an ignition *guide*, by no means is it a complete summary of talent areas. The division of talent areas used is for ignition and evaluation purposes.

The objective is to develop the individual as a thinking, multi-talented person capable of shaping the changing world of the future; curriculum being the means not the end. In our experience we have found that talented students and teachers are very capable of developing systems to meet individual potentials when productive thinking, and creative talents are ignited and allowed to function.

This booklet was produced for professional teachers in the hope that the philosophy of multiple talents, and productive thinking will be useful in professional endeavors to aid in the development of future citizens.

G. Stevenson
Director

NOTE ON USAGE

1. Thinking and talent objectives are an effort to convey the types of learning and reinforcements expected from each set of activities.

2. The teacher note, we hope, will clarify.

3. The activities are a variety of ways to activate the thinking and talent process. This is an ignition guide, we know that you as a professional teacher will find countless ways of involving curriculum and relevant life situations to develop the students as thinking, talented individuals.

4. Curriculum related activities are sugges-

tions. Your situation and grade level, will suggest a greater variety.

5. The Evaluation is an activity that is rather typical of the set. It could be used in a pre and post test situation, or to set up performance criteria standards upon which accountability could be based.

6. The Lesson Plan, Gadget Painting, page 137 is to demonstrate how the talent and thinking areas can be combined to support each other and create a very meaningful learning situation for students.

INTRODUCTION

Multi-Talent Potential

Calvin W. Taylor
Professor of Psychology
University of Utah

This paper is being written from the point of view of a basic researcher on creativity and other high level talents found through basic research and needed in adult careers in the world-of-work and otherwise in effective adult life. From my consulting experience on the 1968 White House Task Force on Talents, it became very clear after visiting the elaborate, expensive program at the Air Force Academy and otherwise serving on the project, that practically no educational or training program focuses directly on developing the high-level intellectual talents of people. In most cases program leaders stated that talents were important but that they hoped these were being developed as a by-product to some other central focus in their regular programs. Practically nothing came from that potentially powerful report from that White House Task Force, except for the efforts of those who worked on it and the things that a few of them have done individually since contributing to that report.

Multiplicity of Talents and of Giftedness

Our strongest single observation in all our work is that there are multiple kinds of talents and therefore multiple kinds of highly gifted people not just a single "The Gifted" type of person or student. The international secretary in England of MENSA (members of which had all qualified by the single standard of having scored in that 2% of IQ scores in intelligence tests once in their life) corresponded with us many years ago that those in their local chapter meetings of MENSA were quite a motley lot. In fact, he did not see most of the mass having risen near the top in their careers and other adult activities like the presumed "cream of the crop" they were supposed to be from their intelligence test performance. He wondered what was missing with these people and

asked if perhaps it was partly that their creative scores were generally not nearly as high as their intelligence test scores. He was obviously awakening to the growing evidence that IQ tests do not measure creative potential but are essentially on the different target of the ability to get grades in school work as traditionally conducted. (This finding must indeed be a difficult pill for most MENSA members to swallow.)

For nearly two decades we have been searching for procedures to identify persons who will be effective during their professional careers, using a career criterion-oriented measurement approach. Early we discovered that grades, though expensively obtained through four college years, were of little value or even at times of no value whatsoever in spotting those who would be most successful as physicians, scientists, engineers, teachers, nurses, and executives. It seems as if there are two different worlds, essentially lowly related or unrelated, namely the academic world and the professional career world. One type of person might be gifted in the academic world and another type in the real world. Those who have been in both worlds are not surprised at these findings, but these results are quite unexpected ones for those who have experienced only the academic world and now run it. One person who heard my recent presentation to a Conference on the Gifted in Los Angeles wrote me and said that this finding of little or no relation between grades in school and career success is one of the best guarded secrets in education.

This section has been divided into three main parts. The first part deals with classroom programs focused directly on talents and their cultivation so that each talent is functioning to some degree in every student in all classrooms. The second part is on testing programs outside of classrooms. That second type of program could discover especially people with those talents which have been heretofore largely ignored or neglected, so that positive steps can be taken about these potential, though dormant, talent resources. The third part

is the need for developing new accountability measures as a part of a total, broad assessment system that evaluates educational outcomes, such as how well a broad band of talent resources have become functioning affectively in students in school. The presentation closes with Toynbee's challenges to our nation to develop her neglected talents and with an analogy of mining processes which yield multiple metals instead of only one.

I. Talents as the Central Focus in All Classrooms

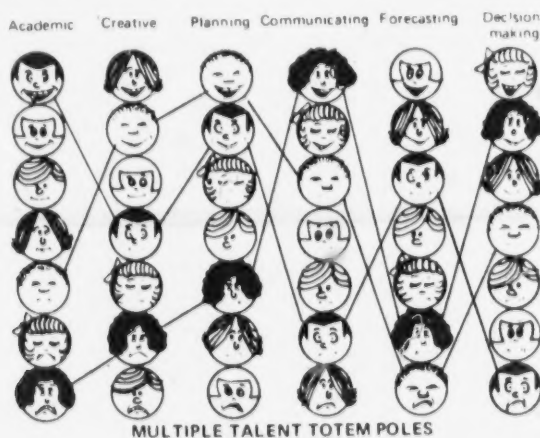
A frequently stated goal in education is to develop the total individual. However, close examination in most classrooms would indicate the actual focus is on the teaching of knowledge, resting upon the big assumption that all good things will happen to everyone if and when they become sufficiently knowledgeable. With teaching of knowledge as the actual goal, the effect as reviewed from the research perspectives is that practically all students are experiencing only a very narrow band of intellectual talents while they are putting in their time in schools. They are largely being restricted from and deprived of using many potentially important intellectual talents during the large portion of their early lives that are spent in school programs. Consequently, either they do not realize that they possess these potential talents or if they are vaguely aware of them, they do not know very well how to activate them so that they are functioning to some degree of effectiveness rather than remaining dormant. Nor does the school system nor the testing programs typically used know to what degree students possess potential in these various important high-level talents. A succinct summary of this Multiple Talent Approach to Teaching is presented in Exhibit A (see page) entitled "All Students Are

Now Educationally Deprived" and presented in greater length at the XVIIth International Congress of Applied Psychology held in Liege, Belgium, July 25-30, 1971.

The most effective way of illustrating our approach has come through the ingenuity of two educational media specialists, Darrel Allington and Vern Bullough, who have displayed our ideas in the form of the Multiple Talent Totem Poles. To attain the most important results possible, at least six separate talent totem poles are needed, such as those for academic, creative, planning, communicating, forecasting, and decision-making talents shown in Figure 1. Many more could be added to the six (such as those listed in the third paragraph in Exhibit A).

The dilemma that has hindered real progress in educational reform regarding talents is that the public as well as too many behavioral scientists and professional educators have been sold on the notion and thereby have a "fixed idea" that intelligence tests measure the total intellect and are therefore essentially synonymous with and include each truly important intellectual talent that people possess.

If the complexity of talents is *not* recognized and if students are seen through the oversimplified picture of only one talent, then they will all be lined up from highest to lowest, solely on the basis of that single talent. They may almost be pegged by teachers and students as to the "one level" where they belong. However, basic research over the last 65 years, which unfortunately is still too unknown to most of the above people, clearly indicates that the intelligence tests only cover one very small part of the total intellectual powers that all people possess.



For nearly half of a century, research on intellectual talents has clearly shown that we have talents of many different types, not just one academic (i.e., one "general intelligence") type. Nonetheless, this evidence can be quite a shocker to those with an overgeneralized and fixed idea about what a general intelligence test measures. This attempt to move people from a grossly oversimplified idea of intellectual talents, which people have tended too readily to accept, toward a much more complicated, though more realistic picture of the brain's total intellectual powers, tends to produce resistance rather than ready acceptance. For example, Guilford's organizing of such analytical research on intellectual talents has yielded a "Structure of Intellect". His three-dimensional "periodic table of the Mind" estimates that man has at least 120 specific and separate high-level intellectual talents, with each one being of importance in at least some human activity. From this up-to-date view, typical intelligence tests cover no more than eight talents, less than 1/12th of those 98 now known. *Therefore, intelligence tests do not cover the other 11/12ths of the important intellectual talents now measurable.*

Intelligence tests were built to correlate with academic grades, and since then, the tendencies in many school practices are to make academic grades, correlate more closely with IQ scores, which yields a tightly closed, circular system. Such concepts as over-achievement and under-achievement, together with their corresponding action programs, are designed to make grades correlate more highly with intelligence tests by trying to move all people who are off the trend (regression) line back into the trend line "where they belong". This is a beautiful example of a belief that something is wrong when persons fall too far away from the correlational regression lines. This belief that such people are not in their correct place has led to the practice that the school program should be run deliberately in ways to move them back to their correct place and thereby increase the correlation between school grades and IQ scores.

Our title of Academic Talents includes those talents in the intelligence tests and probably a few others, but certainly excludes the large, vast majority of the intellectual talents now known to exist through research. This locked-in system

of building intelligence tests to correlate with grades and refining classroom programs so that school grades will correlate with intelligence tests must be broken wide open for proper progress in schools, as far as the full range of student potentialities are concerned.

The important talent research findings cry out, along with student protesters in colleges and now also in high schools and earlier levels, that too many school activities are not relevant and too many relevant activities are not in school programs. It is amazing, though perhaps understandable because of the still widely held ideas indicated above, that editorial writers, top citizens in various professions and executive positions in the world of work along with alert students, are leaders in awakening to these educational shortcomings in intellectual areas of activity. In other words, they are awakening to the fact that there is tremendous potential for educational reform and for improvement in the cultivation of the intellectual talents needed in the professions and other high level positions in the world of work.

To show our verbal (as well as our real) predicament, I have stated this situation in a blunt way by saying that the best new pay dirt for educational reform now scientifically "available for mining" is in the non-intelligence, but still intellectual area. This is because the extremely large majority of man's high-level talents are of the *non-intelligence intellectual type* and nearly all of these talents tend to remain dormant in typical academic classes.

Our Multiple Talent Approach represents a new and tangible research-based approach for carrying out a recently stated new goal or aspiration in education called "zero reject". This new hope shows up in Leon Lessinger's recent book entitled "Every Kid a Winner". He uses his variation of one of our totem poles on this book's jacket as a way to attract attention to this idea of each person finding success in school. The Multiple Talent Approach enables almost every kid to be above average and thus a winner in at least one talent area, when several different talents are used centrally in classroom activities. With students

¹The book's subtitle is *Accountability in Education*, Simon & Schuster, New York, N. Y., 1970.

participating in each of these activities, this approach is one of the best types of participative education since its wide variety of activities are so world-of-work and so career relevant.

The total talent pool in all our youth is largely either available for development or captive in schools, depending upon which way one wants to look at it. The unidentified, untapped, undeveloped talents in our youth may be the greatest waste of potentially valuable resources in our nation, especially if we sum the total potential mind-power of all our youth for all the years that they are collectively in school. Furthermore, the students are becoming patterned and programmed during these years so that to a considerable degree their future is determined and forecastable from their past. In other words, the longer that any talent or set of talents remains dormant and unused, the more confidently can it be predicted that the persons will never really use such potential talents in their entire lives.

Since there is hope to find a high degree of some talent in almost all students, it seems inadvisable to separate out just those who are most talented in only one area of talent and then give them special treatments and opportunities. Such programs thereby deprive those highly talented in other types of equally if not more important talent areas from many opportunities for which they might be well suited. It is in keeping with the true spirit of America to give every kid a chance at opportunities for which he is well suited, instead of continually having ways that deprive him from such opportunities. In other words, instead of depriving more and more people of more and more educational opportunities — or of withholding more and more educational opportunities from more and more people — the reverse of providing more and more opportunities for more and more people is in tune with the American dream.

All of these things are now scientifically available to mankind for whoever wants to use them and is willing to put forth the effort to do so. Enough progress has been made so that it is now feasible to start implementing the Multiple Talent Teaching Approach widely and quite economically across the nation, first with those teachers who are most ready to move more fully in these directions and then later spreading to more and more

teachers. Implementation efforts are needed as soon as possible because millions of students are now educationally deprived of these research-founded approaches for developing their potential resources and will continue to be so until such implementation takes place.

I recently met a little girl who has a lot of sparkle but who is seen to be at the bottom of the academic totem pole and would be suffering and "rejected daily while being prepared for dropping out" in most schools. Yet she told me that on Thanksgiving Day she would rather be in school than have a holiday. This is because as a third grader in a Multiple Talent Teaching school, she is finding life to be exciting in school and in turn, school is finding her to be a lively, exciting child with some areas of real promise. This is certainly some direct evidence from her that the multiple talent school program is well designed for her and has a positive humanizing effect. Indeed, any school program that would not find promise in her would be malfunctioning. To me, any system which allowed only her academic talents to function so that she felt that she was almost no good would be an evil anti-human system.

Parent reactions tend to be highly supportive to multiple talent schools since they really do want the best things possible to happen to their children. They tend to be delighted that each child shows promise and experiences noticeable success in at least one type of the adult-like activities in classrooms. They all like to see their own children become more effectively functioning human beings. For example, when 400 parents turned out at a first PTA meeting of the new year at a modest-sized elementary school, they showed curiosity and supportiveness, rather than a desire to debate or shoot down any new things being tried. In fact, they asked, "What should we be doing at home so that we don't louse up the good things that you are doing for our children at school?" And they also asked, "When are you going to write a booklet of instructions for parents like you are writing for teachers on how to use the Multiple Talent Approach, so we will be continuing and facilitating at home what you are doing at schools for our children?"

In a way parents would like Talent Awareness Training like we are giving to teachers in in-service

training programs. We have also been appealing with growing success to schools of education to give pre-service Talent Awareness Training to the forthcoming new teachers they produce.

Undoubtedly a lot of good could be accomplished if more money were put behind programs to develop the multiple talents of students and to recognize and identify multiple types of giftedness. It is a comparatively economical program, especially after teachers have learned through in-service training how to teach for multiple talents. In addition we feel that it would be possible, from all evidence we have seen and from programs we have experienced, to put much more of the existing financing and facilities behind a multiple talent approach to conducting education, especially if resources were switched and put behind this new program while more obsolete approaches were being phased out.

Forecasts that an increasingly large majority (60% or more) of high school graduates will want to go on to college in the future poses a real dilemma to colleges and universities. As one option they can stick with their current approach of essentially one academic talent and dig deeper and deeper into that "talent barrel", having to water down their educational program accordingly. Or they can take the new opportunity of considering multiple talent barrels and find 60% by looking for those who are near to the top in at least one talent barrel. In this way they can continue to "skim the cream off the top" and function at a sustained high level by dealing with multiple talents and letting students function at their highest level on their best talent. Yet almost none of 2,600 colleges and universities seem to have wised up to this new opportunity. National leaders and programs could develop incentives to awaken them to move into these new directions as a way to better serve both our youth and the nation as a whole.

II. New Tests for Identifying Important Talents Heretofore Neglected

As a result of over a decade of research, the ALPHA Biographical Inventory has been produced (see Exhibit B). ALPHA is a 300 item multiple choice instrument containing a wide variety of questions about an individual's background, interests, environmental pressures, self-descriptions, etc.

The results from studies to date indicate that the ALPHA Biographical Inventory has the following advantages over conventional measures, which should be of interest to anyone concerned with the identification and development of talent: (1) The availability of a Creativity Score which has been extensively validated on adult scientists and engineers, and (2) the timely finding that the Creativity Score does *not* discriminate between Negroes and Whites. This Creativity Score, constructed from responses of over 3,000 professional scientists and engineers over a 10 year period to predict scientific creativity and productivity, has a pattern of low to moderate interrelationships with conventional measures of talent and academic achievement. It is believed that ALPHA could have a variety of applications in identifying different kinds of talent, and as a counseling and guidance instrument. An Academic Performance Score was also obtained by scoring ALPHA in quite a different way.²

A special analysis of sloping profiles was made of the two scores from ALPHA obtained on 13,000 high school students in North Carolina. Nearly 500 students were discovered who were in the top 25% on the creativity score but not very promising academically (in the bottom 2/3 on the academic performance score).

Based upon this analysis it is estimated that about 100,000 of our youth leaving high school each year will *not* be seen by schools as promising persons and will find it difficult, if not impossible to get into and through college, even though they are highly talented (in the top 25%) in creative potential.

Likewise, over 300,000 students leaving high school annually will be low enough on academic potential to be told they are unpromising and will have great difficulty getting into and through col-

²The Academic Performance Score from ALPHA was constructed on college freshman and applied to high school students, resulting in cross validities in the mid-sixties (as high as .70 for White males) against academic performance criteria. These results were consistently higher than the validities obtained from any of the 24 scores from the more conventional academic selection tests used in the study. Thus, a measure of academic performance was obtained from biographical data which was both unusually valid and lacking in the kind of cultural discrimination that has plagued our conventional approaches in talent identification.

lege, even though they are highly talented (in the top 25%) in at least 1 of 5 or more heretofore largely neglected high level talents, such as creative talent, planning talent, communication talent, decision-making talent, forecasting talent, and other types so vital to progress in our world. No wonder we need new educational programs and new institutions for those students who are so promising in these heretofore neglected talents.

This new instrument not only is an excellent talent retrieval device with real validity against career and life performance but has the other priceless quality of providing essentially equal opportunity for different races in America, a central part of the great American declaration. We have been highly disappointed and troubled that in spite of this evidence, practically none of the professional testing or educational leaders in this nation are rushing to use this new testing technique. In fact, we have just written to a friend in India, the director of an important national talent search program, and encouraged her to move ahead as fast as she can to implement this new testing technique widely in the talent search in her country. We told her that we can then point to her program in order to awaken our nation to get "on the ball" and become leading followers in the trails that India has pioneered.

III. A Multiple Accountability System Needed for Assessing Educational Outcomes.

A first great need is to get new and sufficiently different phenomena happening in classrooms. We are persuaded that this is now possible through the talent-focused Multiple Talent Approach (described briefly above), which has worked enough times that the confidence level is very high that it is repeatable. After new phenomena are occurring, the second need to build an appropriately new measurement and evaluation program to assess the outcomes of education, i.e., to yield an audit or accountability system to show clearly and measurably the advances made by the new classroom approaches. With education now very much in the competitive arena — in the market place — and with an awakening to the need for total accountability and not just input costs, through determining the outcomes and the validity of the

educational programs, the total evaluation procedure is highly important.

At a frontrunning ASCD conference in Sarasota, Florida on "Assessing the Outcome of Education", most of those 20 or so present concurred with one participant's observation that "if you can now measure it, it is relatively unimportant!" Being present and having spent much of my career in building measuring devices for human performances and characteristics not yet measured, this was indeed surprising to me. I became keenly aware of the sickness of the situation, if so many leaders were just awakening to the need for new outcome measures to go along with *new* attempts at educational improvements. In many cases the awakening occurred after they had put in large and expensive efforts and programs to bring about changes without much measurable success to that date.

More recently I have become even more keenly aware of the national predicament when I realized that some so-called educational leaders are now going to show their boards of education that they are doing a good job by having their students score sufficiently high on traditional measures of academic achievement. They will have their teachers do so, if necessary by "teaching the tests" and thereby narrowing the experiences of their students in the process. A main trouble is that "the tests they teach" are *too academic* and therefore far too narrow in scope and perspective, missing too much of the total human resources needing to be developed and assessed. Our counter slogan is that we are much more interested in a crude measure of something important than a much more precise measure of something relatively unimportant.

A sound, wide talent-band assessment system, including some traditional academic measures but also many, many other new measures, would discover and reward those teachers and schools who are moving into a wider talent band. At the same time it would expose and make less self-satisfied those who are narrowing the talent band for their students in misdirected assembly-line efficiency fashion by teaching the tests. Such sound measurement approaches and broadly conceived assessment programs could show shortcomings, could reduce complacency and resistance to improve-

ments, and could have the greatest of impacts at this time on our nation's educational programs. Unfortunately, large testing organizations have not been real leaders for improvements in these directions. They therefore should *not* be the ones primarily sought out now as most ready to provide such leadership, because they have already had their chance for a long period. At this time new measurement and assessment leadership should now be sought from other groups.

State and national leaders and program could sponsor the development of this vital wide-spanning accountability system and could catalyze its widespread use through financial incentive programs with new money if possible, if necessary other monies could be reallocated for this much-needed step ahead. This would be timely in counterbalancing tendencies to take backward steps, by adding to new measures but only by doing "more of the same" by teaching knowledge and by teaching the tests, like some backward countries have done. This would unfortunately narrow the talent band experienced by students and increase their number of neglected talents.

Toynbee on Creativity³

"Is America Neglecting Her Creative Talents" — and thus her future history — is the challenge Arnold Toynbee has raised to our nation. He states that creativity is mankind's ultimate capital asset, a matter of life and death for any society. He concludes that if America is to fulfill her manifest destiny, she must treasure and foster all the creative potential that she has within her.

In his second paper, "On the Role of Creativity in History", Toynbee points out that creative talent is the talent which, when functioning effectively, can make history in any area of human endeavor. The implications for American education are later elaborated by him in an April 18, 1968 letter to us as follows:

As a foreigner who has only been a visitor, though a frequent one, to the United States, I feel different in commenting on American education and in suggesting a new departure for it: However, my impression — and indeed

³See booklet "On the Role of Creativity in History" and "Is America Neglecting Her Creative Talents?" by Arnold Toynbee, University of Utah Press, Salt Lake City, Utah, 1968.

my conviction — is that, if America is to treasure and foster all the creative ability that she has in her, a new and bright spirit of change has to be injected into her educational philosophy. The rather rigid egalitarian models of educational selection and treatment, which seem to me to be tenaciously held by the affluent majority of American people, will, I should press, have to be refashioned to include the creative talents of the coming generations.

It would follow from this, if I am right in my diagnosis, that new educational philosophies and new institutions of learning need to be constructed to provide an opportunity for creative individuals to enhance their talents in schools. If the American people, or any other people, are unwilling to change their minds and hearts to remold their educational establishment in ways that foster creative talents, they cannot expect to be able to persist in this negative attitude with impunity. This is surely true, particularly of the American people, conceived, nurtured, and guided, as it has been, for almost two hundreds years by its creative leadership. 'Where there is no vision, the people perish.'

Searching and Processing for Multiple Metals

A homely analogy may serve here. In our mining region, some large, efficient mills have been built in order to process literally tons of raw materials from which valuable metals can be extracted as important natural (physical) resources. In fact, they have "the faith to move mountains" by processing a mountainside of rocks and boulders of all sizes through their mills. These boulders and rocks are ground in successive steps until they are so fine that, upon the addition of water, they are turned into a stream of silt. This stream is next processed to yield copper, the metal initially sought. The procedure used to end here, but now the stream is processed further, in several other successive ways, to extract each additional metal that can be found in the current of silt. These metal mining organizations claim that they have been very alert to new and better ways of processing the metals presently recovered out of the stream of raw material.

They also contend that they are very alert to any discoveries, through basic research, of the existence of new and sometimes rare and precious metals. As soon as such metal is thus discovered, they state that they will immediately try to identify its presence in the residual stream that is

being poured into the valley floor as a mere waste product. If the new metal is present, they will rapidly try to find ways of adding other processes in the mill to draw out and develop this additional metal from the total potential in the stream. They will, of course, continue to be interested in extracting and processing copper the initial metal sought, but no longer to the exclusion of other important metals, whether known to be present or potentially available, though still to be identified and developed. The extraction of any additional metal might, in large part, become a bonus, because the rocks have already been ground, because the total mill is already in existence, and because only minor additions in the processing may be needed to develop this additional metal out of the raw materials.

As they look back over the years, they realize that they have dumped so-called waste products into the valley floor that may contain various metals of a larger total value than the metals that they have extracted.

Besides focusing on those talents traditionally identified and cultivated in schools, in a similar manner we could be alert to discover other human talents and resources heretofore unrecognized or underdeveloped. We could try to identify as soon as possible the newly recognized potentials in students (such as psychological uranium) and to incorporate suitable new processes for developing these additional resources, wherever feasible. Much of the work has already been done, because the students are already here, the organizations are already functioning, and certain processes are already in efficient operation. And as we discover, identify, and process these additional new human resources, we may wonder, like the mining specialists, about how long we have previously been pouring such talent resources untouched through the mills and out of the world, unnoticed and undeveloped.

Unlike what happened to the White House Talent Task Force report, due unfortunately to political events, this booklet is designed by teachers for teachers so that something will come of basic research findings and educational engineering products. We are confident that appropriate follow-through efforts will lead to classroom action and assessment programs. Where such programs

have been implemented, the outcomes are sufficiently promising to be most worthy of new funding. Legislators at national and state levels, who have generally been quite successful in their world-of-work careers, will often readily understand the multiple talent approach and will not be opposed to the development of the nation's important future talents through classroom programs. For example, Illinois legislators voted 100% for a properly-stated new talent program. Also much of the funds in existing not-too-fruitful and not very Congress-defensible programs could be transferred and allocated to this more up-to-date, public-appealing approach. As stated earlier, some local funds can gradually be switched to back up those teachers who are willing to expand from their typical teaching methods into a more full multiple talent teaching approach.

Admittedly, it is a test of wisdom of the educational decision-makers to determine the truly sound ideas and suggestions from the many now being offered for educational change. We believe that this presentation for educational improvements is based upon as sound a research foundation as any other approach and offers at least as much promise for real educational changes. This manual for teachers enables these changes to be much more readily undertaken with success.

This program can be enlivening to all as students begin to become more fully functional and effective through learning better to use more of their high level talents heretofore largely unmeasurable and not systematically called for in most educational programs.

Exhibit A

ALL STUDENTS ARE NOW EDUCATIONALLY DEPRIVED

Calvin W. Taylor¹

The Multiple Talent Approach to Teaching has emerged from sustained research on talents. A breakthrough of teaching for creativity breaks away from the narrow band of academic-and-intelligence talents and expands into teaching for several other high level talents, heretofore largely ignored and left dormant in typical classrooms. *Intelligence tests*, encompassing about eight talents (less than one-fourth of the 98 talents now

known), miss more than nine-tenths of the important intellectual talents now measurable. Consequently, the main goal in Multiple Talent Teaching is to have students use many more of these neglected talents than they do at present.

Through this new approach, *nearly all students can be above average in at least one of these many intellectual talents* which can now be functioning in classrooms. Furthermore, students can use each of these multiple talents to process information across all subject matter areas and thereby acquire even greater knowledge and also work at the fringe of knowledge and beyond.

Instead of conceiving of students as merely learners and reproducers, we esteem them much higher as thinkers and producers, decision-makers, communicators, forecasters, creators, composers, planners, and designers, organizers, cultivators of resources, innovators, leaders, etc. Rather than depriving them of these "adult prerogatives", teachers have them deal with knowledge in all these talent ways. The youngest are remarkably ready to function in these adult-like activities. They even become more full-fledged children in the process, being livelier, healthier, happier, and more self-esteeming and self-managed when their natural talent processes are growing and functioning naturally.

The Teaching - of - Knowledge Approach has proved to be a less-sound educational focus, without yielding its promised by-products. In contrast, the Multiple Talent Totem Pole Approach moves toward the goal of developing fully functioning, effectively talented people; enriches and enlivens the students and their teachers and administrators; and thereby humanizes the entire educational process.

Exhibit B

SELECTION OF SCIENTISTS WHO WILL BE PRODUCTIVE IN THEIR CAREERS

Calvin W. Taylor¹ and Robert L. Ellison²

For nearly two decades we have been searching for procedures for identifying persons who will be effective during their professional careers, using

¹Professor of Psychology, University of Utah, Salt Lake City, Utah, U.S.A. 84112. (Abstract for the XVIIth International Congress of Applied Psychology, Liege, Belgium, July 25-30, 1971.)

a career criterion-oriented measurement approach. Early we discovered that grades, though expensively obtained through four college years were of little value or of no value whatsoever in spotting productive scientists who would be effective in their careers in such important professional groups as scientists, engineers, physicians, teachers, nurses and executives. Similarly, well-chosen existing tests of personality, motivation, and intellectual aptitude showed little or no validity against either specific or overall synthesized criterion measures of career accomplishments.

High multiple correlations have *only* been obtained by using a battery of around 50 of the above types of predictor scores against each of six separate criteria, accounting for about 50% to 70% of the criterion variance. The Beta-validity coefficient products showed that the high battery validity was due to many small, separate, valid contributions from the different scores.

The biographical inventory approach, with newly constructed items aimed at career criteria and with empirical scoring, invariably was the most promising approach throughout this search. Like the above battery, a biographical inventory is internally complex, with each valid item doing its small but separate part in overlapping each criterion. Item alternative analyses have produced scoring keys with initial validities typically in the .80s and .90s and cross-validities in the .40s, .50s, and .60s against the difficult-to-predict career criteria. These phenomena have been repeatable in nearly a dozen studies, using a dynamic approach of eliminating deadwood items and adding newly constructed ones as we go. Outgrowths of the fifteen or more experimental biographical inventories ranging from junior high to adult career levels are the published Alpha I and Alpha II and Beta inventories. These are scored for academic performance by one system and for the more important career performance by another. These scores have also fortunately been found to date to be uncorrelated with race.

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(Abstract for the XVIIth International Congress of Applied Psychology, Liege, Belgium, July 25-30, 1971.)



"It is in fact nothing short of a miracle that the modern methods of instruction have not yet entirely strangled the holy curiosity of inquiry; for this delicate little plant, aside from stimulation stands mainly in need of freedom; without this it goes to wreck and ruin without fail."

—Albert Einstein

"The purpose which runs through and strengthens all other educational purposes — the common thread of education — is the development of the ability to think. This is the central purpose to which the school must be oriented if it is to accomplish either its traditional tasks or those newly accentuated by recent changes in the world."

—Policies Commission of the
National Education Assoc.

"The brain which underlies the mind is far, far too complex for us to hope that all of its intellectual activities can be represented by only a single score or by a handful of dimensions."

—Calvin W. Taylor

"Far out thinking is a means to an end — to him whose elastic and vigorous thought keeps pace with the sun, the day is a perpetual morning."

—Henry David Thoreau

"If a man has a talent and cannot use it, he has failed. If he has a talent and uses only half of it, he has partly failed. If he has a talent and learns somehow to use the whole of it, he has gloriously succeeded, and won a satisfaction and triumph few men will ever know."

—Thomas Wolfe

"Individuals do differ greatly in their capacities, and each must be enabled to develop the talent that is in him. Whether individual differences in ability are innate or are due to environmental differences, we must deal with them imaginatively and constructively."

—John W. Gardner

"The conditions for creativity will have to be carefully nourished if we want more creativity to be demonstrated. All of our evidence shows that we must keep search alive, and we must allow sensitivity to new ideas, perhaps tolerating a little foolishness. We must not develop critical abilities to the point that anything unproven is stupid or that anything weak, is altogether wrong. We must not insist upon conformity, or we will end with traditionalists rather than with innovators."

—Ernest R. Hilgard

"SOUNDS OF MUSIC"

By Stephanie

First Grade

GUIDELINES FOR DIVERGENT THINKING

Divergent Production: A generation of information from given information where the emphasis is upon variety, originality, and quantity of output from the same source.¹

The divergent thinker seeks many different and alternative answers to a given problem. The student is not concerned, as in convergent thinking, with finding the best answer, he is involved in creative exploration of ideas and their relationships.

A question asking for divergent thinking might be to list all of the uses for a shoe. Evaluate divergent production according to the following criteria:

Variety: The student is able to respond with many ideas free from categorical restrictions. Responses showing variety of production might indicate a shoe used as a weapon, a tool, apparel, food, source of leather, etc. Variety is shown as the student moves from one category to another.

Originality: Response is unusual and original when compared with other group responses.

Quantity: The response itself is not important. The total number of responses generated represents quantity.

The following teaching approaches encourage divergent thinking:

1. Variety

- Encourage all students to participate
- Accept all responses
- Seek many categories

- Encourage variety
- Ask for more categories

2. Originality

- Encourage the students to think of an idea no one else will think of.
- Encourage uniqueness
- Encourage students to listen and not repeat others responses.
- Encourage innovative thinking

3. Quantity

- Accept all ideas
- Ask for as many ideas as possible
- Ask for an increase in ideas
- Ask for as many more responses as possible in a given category
- Encourage more than one response from everyone.
- Provide an opportunity for a generation of ideas, then provide another and another.

It is important to emphasize that *all ideas are accepted*. Some unexpected ones may, in some instance, be the best. Students will try off-color remarks now and then just to see if all ideas are really acceptable.

Feel free to insert your own innovative thinking. When students and teacher become creative thinkers, their vistas become limitless.

Asking for divergent thinking responses to any open ended questions generates enthusiasm and student involvement. Divergent thinking questions relate to all curriculum areas.

An important point to remember is that these ideas should be placed throughout the curriculum. Creative production is a high level thinking skill and should be limited to reasonable and spaced periods of time.

¹Guilford, J. P. Progress in the Discovery of Intellectual Factors. In C. W. Taylor (Ed.) *Widening Horizons in Creativity*. New York: Wiley & Sons, 1964, 261-297.

STRETCH

Thinking Development Objective: Divergent thinking of students will be developed as a result of their responses concerning the use of familiar objects in unfamiliar ways.

Teacher Note: An extensive list of uses shows divergent thinking is taking place. If entirely different categories are included on the list, the student demonstrates flexibility; and if some of these are unusual, the student is demonstrating originality. Divergent thinking skills combine fluency, flexibility, and originality.

Activity: Conduct a class discussion about all kinds of hats. Then ask the students to stretch their imaginations and think of as many uses as they can for a hat. Let the hat help them to do anything. In five minutes time, have students write as many uses as they can for a hat. Have students share orally and make a master list on the board. Younger students may do the entire activity orally. See if the sharing has triggered their imaginations. See if they can increase their list by adding an idea of which no one else has thought.

Activity: Ask the class to think of objects or items that were used in the past but are no longer in use. List them on the board. Direct the students to select one item from the many listed. Using this one item, have the students think of many ways to use it in today's world.

Activity: Ask students to give as many uses as possible for any of the following items: old magazine or pictures, a map, a book, a horse, junked cars, a magnet, a prism, a solar battery, or a typewriter.

Activity: Display an assortment of odds and ends or broken objects. Have each child take a turn at seeing how many original or unusual things he can make out of this collection. Have the student make a list of all the uses he can think of for each item he made. He may want to ask a friend to think of uses for his invention to see if they think the same or if they have different ideas. Now have him select his favorite or most unique production. What is its best use? Plan a sales campaign

to sell it. First have him decide who his buyers might be and then direct his advertising to that particular market. Second, he will have to decide what media — TV, radio, newspaper, etc., he will use and direct his advertising to that medium.

Activity: Ask the students to state the usefulness of a trained, semi-skilled, or unskilled worker or person who has had a machine take over his job: a blacksmith, a railroad engineer, carpenter, porter, doorman, street sweeper, teacher, policeman, doctor, entertainers, photographers.

Activity: Ask the students to list all the things a person could do after he reaches his own time for retirement? Also have them list reasons why a person would need to retire.

Curriculum Related Activities:

Language Arts—Have students make lists of words that can be substituted for said.

Math—Ask students to find out how many processes they can use to arrive at a particular answer. Given a specific set of data, see how many story problems they can write?

Science—Ask students how many ways they can use a specific scientific fact to help them? To help others?

Have students list many possible uses for a familiar item like a toothbrush, or an unfamiliar item such as a radio tube. Ask students to use these two items to do something unusual.

Social Studies—Ask students how many ways they can find out about other people, customs, places or times. Have them list all the ways in which people or places are alike.

Ask students to list all the problems of a particular age.

Art—Have students discover and discuss all possible art materials. Have students tell all the uses for a specific material.

Music—Have students list many ways to produce rhythm. Have students list all the things in life that show rhythm.

Physical Education—Have students think of all possible advantages for developing spe-

cific physical skills or coordination.

List all possible reasons for team work and coordinated efforts.

Have them discuss how many ways a given piece of equipment or a given play area could be used.

Evaluation: Have students give as many uses as they can think of for a pencil.

FLUENCY

Thinking Development Objective: To help the student experience and develop fluency and flexibility.

Teacher Note: These activities may be used as warm-ups to other areas of thinking. When used as a warm-up they should be done orally. They can be a starter to directing ideas in the area of the teacher's choice.

Activity: Have the students write or give orally the names of all things you can think of that are: red, pink, purple, orange, etc. Use only one on any given day. This can be initiated in the morning and then resumed after an incubation time. Ask for something that no one else will think of.

Activity: Using any letter of the alphabet, have students name as many words as they can that begin with the same letter. Then have a browsing period through the dictionary (but do not have any list) and at a later period do the same letter again and see if fluency has increased.

Activity: Use a phonetic development approach with the students, either orally or in writing to get divergent production. Example:

1. Use two letters bl, ba, cl and name as many words as possible that either begin with the letters or have the letters included within the word.
2. Name or write as many words as possible that begin or end with a given suffix or prefix.

3. Write down all the words you can think of that start with the letter c. Go over your list and put an s before each word that has an s sound and put a k before each word that has a k sound. Can you find a rule that determines whether the C has an S or G sound?

S- cigar
S- cyclone
S- city
S- cinder
S- center
K- cat
K- cannon
K- coffee
K- can
K- cough

Do the same thing with G words. Find the rule that determines when the G usually has the hard sound and when it has the soft sound.

Activity: According to grade level, have students rewrite either sentences or paragraphs into as many combinations as possible.

Example: The hour was late, the air warm, and I needed refreshment.

To: It was past sundown on a hot night and I was thirsty.

Or: The clock struck 11:15 p.m., with the air like a wet, muggy blanket and I had perspired for the past several hours with visions of a tall, frosty, cold, drink to still my raving thirst.

Activity: Ask students to think of:

1. Descriptive words for foods, flowers, weather, etc.

2. Use heavy or light words.
3. Think of capital letter words of cities, of certain countries, states, counties, rivers in a country, mountains or mountain ranges within a country, etc.
4. Words that are: synonyms, antonyms, homonyms, heteronyms.

Curriculum Related Activities:

Language Arts—Have the students name all the beautiful words or compound words.

Math—Have students name all the numerals that express the number 14.

Ask the students to express the number 1 in as many ways as they can.

Have students find as many different ways as possible to find the answer to a given problem.

Have students find as many different, practical uses for a mathematical concept as possible.

Science—Fluency and flexibility are characteristics of creative scientists. Have the students discuss why being fluent and flexible would be advantageous to a scientist.

Social Studies—Have students give all the reasons why they like to live where they do; why people are different; why cities were built where they are; what we can do to make our community a better place, etc.

Art, Music—Discuss with the class how artists and musicians are fluent and flexible. Use this as a criterion in evaluating art and music.

Have students express fluency and flexibility in their art by how many ways they can graphically express a sunflower or a Christmas tree.

Play a piece of music in many different moods or rhythms.

Arrange a melody on a staff in as many different rhythms as possible.

Physical Education—Use warm-up type drills where the activity is changed each time a whistle is blown. An example would be to change from running to skipping to walking to hopping to jumping, etc.

Evaluation: Ask the students to name everything they can think of that is round. Give them five minutes. The total named is a fluency score. The number of categories used will give an indication of flexibility.

SHAPES

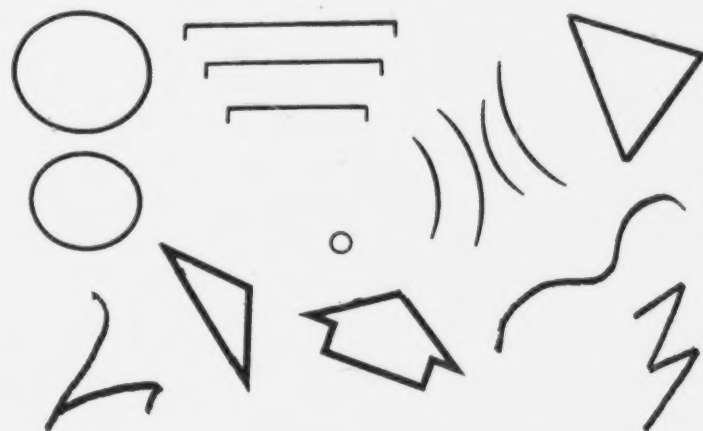
Thinking Development Objective: To develop divergent thinking abilities through imaginative use of shape and form.

Teacher Note: The following activities ask the students to construct a picture or an object from a given shape. Any shape can be substituted. The paper with the shape should have no writing on it so that the shape will have no sense of being up or down.

Activity: Reproduce this,  or any other shape, on paper to students. Ask the if they have ever made pictures from clouds. Have them look at the shape and think about it. Tell the students to make the shape into something. Tell them that they

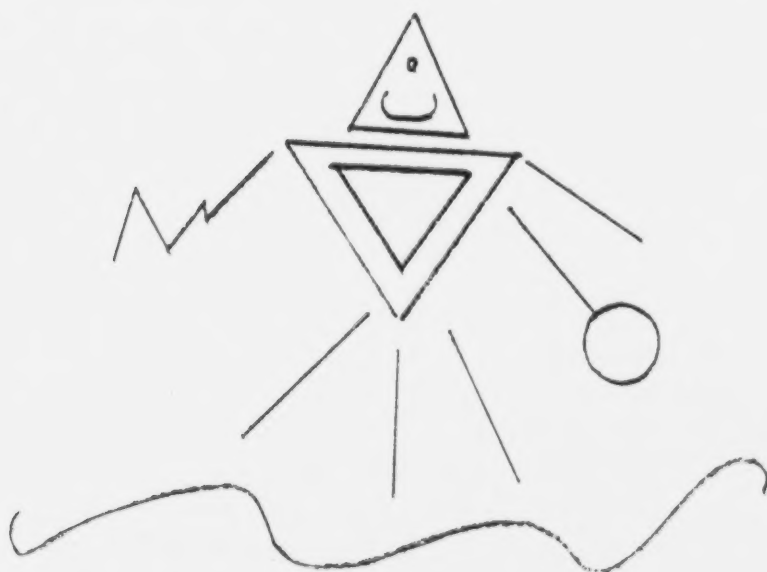
may add lines, any colors, or anything they wish, to make it a meaningful picture.

Activity: Reproduce on paper or a chart these lines and shapes:



Have the students put the lines and shapes together to make something that will be meaningful to them. The symbols may need to be cut out so they can be manipulated by the younger child. Direct the students to use all of the lines and shapes but to not use any of their own. They can make the lines or shapes larger or smaller than is originally shown.

Example:



Activity: Discuss with your students the unusual shapes of nature. Make a list of the shapes on the blackboard. Construct a picture from some of these shapes.

Activity: Have your students construct a picture from all the punctuation marks.

Design a picture using all of the arithmetic symbols.

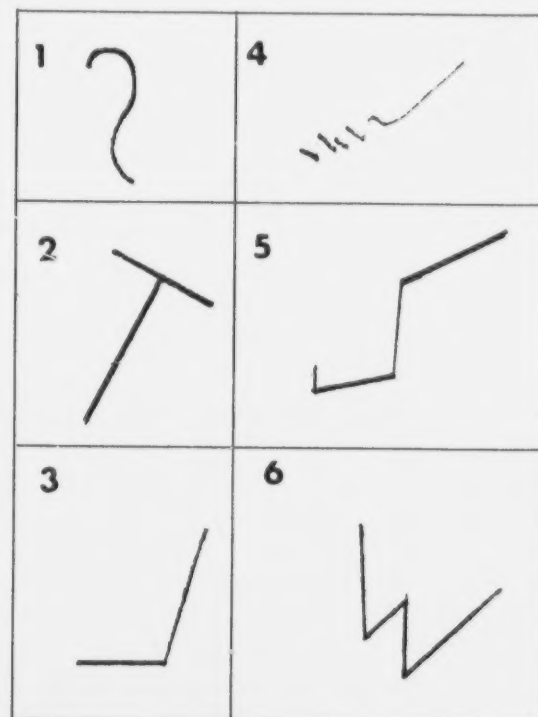
Activity: Give each student a shape cut from colored paper and one piece of art paper. Have them construct a picture using these two pieces of materials and glue, crayons, and scissors.

Activity: When teaching beginning sounds, have students make pictures from the various shapes of beginning sounds.

Activity: Have students make a design by writing their own names in cursive and then add lines.

Activity: Instruct each child to make a shape with a single line. Have student pass this shape to his neighbor who will then complete the picture.

Activity: The students can construct a continuous picture story by starting with a few simple lines or shapes. Students may add to each shape to make it show their idea: For example:



Curriculum Related Activities:

Language Arts—Write descriptions or poetry about shapes in nature.

Describe illustrations you have drawn.

Use shape as a word identification tool.

Math—Study shapes, angles, and lines in geometry.

Study interrelations of shapes as used in architecture.

Science—Discuss shapes in nature (animals, seeds, plants, etc.).

Discuss how shape is related to flight, racing, propulsion through water.

How are shapes related to simple machines or work forces?

How are shapes used to help scientists classify, organize and categorize scientific information.

How does shape differentiate the identification of animals or breeds of the same animal?

Social Studies—Have students discuss how shapes are related to cultural growths. (Compare simple building construction of primitive man to complex shapes used in advanced societies).

Discuss how boundaries relate to the natural shape of the land.

Art—Select a basic shape. Have students draw a picture or design using only this shape. Have students look for basic shapes in nature.

Show students how to use shading to add dimension to shape.

Help class become aware of how to use perspective to add dimension to art.

Music—Study shapes of instruments, orchestra, choreography, stage design.

Physical Education — Have students study shapes relating to games, playing fields, square dances, and other structured group activities.

Evaluation: Have the students use the different shapes they see in the classroom to construct a picture.

SIMILES

Thinking Development Objective: To help students develop expressional fluency and flexibility to communicate more effectively when speaking and writing.

Teacher Note: It is necessary to define a simile as it relates to this exercise. Simile is defined as a figure of speech by which one thing, action, or relation is likened or compared with as or like to unlike things. In the beginning it is suggested that you start with a simile and work as a class, recording on the blackboard or on a chart the responses from all the class members. This provides a model to which children can relate when they are on their own. This group production also provides ideas in any of the following exercises.

Activity: "As soft as . . ." Present this unfinished simile. Record all verbal responses. Encourage responses by asking students what is soft. After all responses have been recorded on the chalkboard or chart paper, ask students to write a sentence or a short article describing something as soft as . . . The written work may be illustrated.

Activity: Have students finish a simile. Some suggestions are:

1. At night our school is as dark as . . .
2. The air felt as cold as . . .
3. The fire is as warm as . . .

4. The colt is as frisky as . . .
5. As quiet as . . .
6. As loud as . . .
7. The fog is like . . .
8. The spring day is like . . .
9. The wind is like . . .

Activity: Have the students describe things in nature by making similes. Have each student pick his favorite simile and see if he can develop this simile into Haiku, a Japanese form of poetry. Haiku is verse consisting of three lines. The first and third lines have a count of five syllables and the second has a count of seven. The total seventeen syllable count forms one sentence or thought.

Activity: To increase students awareness of the use of similes, have the students collect and record similes used by friends, parents, and on T.V. Encourage the students to look in their readers and at poetry for similes. Have the students make their own booklets of similes or make a composite list for the whole class.

Curriculum Related Activities:

Language Arts—Write stories in which similes are used to add detail.

Make a list of synonyms.

Make a list of antonyms.

Write news broadcasts or newspaper articles

using similes.

Look for similes in poetry and writing.

Math—Compare mathematical computation systems; Arabic, Roman, Oriental.

Express quantities in many different ways.

Compare methods of measurement.

Discuss changes in the English monetary system.

Compare addition and subtraction.

Science—Discuss a scientific field such as biology. What subject matter areas are included in this study and why? Analyze scientific specialties in terms of similarities and differences.

Compare different trees, clouds, rocks, types of soil. List likenesses and differences.

Social Studies—Compare cultures and needs of people.

Compare world geography and climate.

Compare people's occupations.

Art—Illustrate a written simile.

Music—Write and find lyrics using similes.

Physical Education—Have the students move like a duck; walk like an elephant; crawl like a worm; jump like a rabbit; leap like a kangaroo.

Evaluation: Have the students write a descriptive paragraph or sentence about silence.

ANALOGIES

Thinking Development Objective: To develop within the student greater divergence in communication, both verbally and in written form.

Teacher Note: Before starting the activities below, ask the students to pretend they are something besides a boy or a girl. Show them an object such as an egg beater. Ask them to use their imaginations. Have them pretend that they are that egg beater. Ask: What can you do? How do you feel? How do you actually move your parts? Describe how you work.

Activity: Have the students pretend to be a pebble on the school ground. One little boy kicked you. Then a little girl used you for hopscotch. Tell some of the other experiences you had. Where did you come from? What will happen to you? How did you get on the school ground?

Activity: Have students pretend to be a tree. Describe what you look like. Where are you growing? How old are you? How do you feel now? How do the different seasons effect you? Tell about some of your experiences. What things and events have you witnessed? Tell about some of the things you think about.

Activity: Have students pretend to be a piece of paper in the schoolroom. What kind of paper are you? Describe what you look like. How

do you feel when someone writes on you? Do you like to have someone erase the writing on you? How does it feel to get crumpled up and thrown in the garbage? Would you rather have a boy write on you or a girl write on you? Tell about some of your experiences. What would you like to have written on you more than anything else? Tell where you would like to stay for a long time.

Activity: Have students pretend to be the chalkboard in the schoolroom. What color are you? How large are you? How do you feel when someone writes on you? How do you feel when the class forgets to clean you at night? Tell about some of the things for which you are really useful?

Activity: Have students pretend to be a can opener. Describe yourself. Where do you live? How do you live? How do you work? Tell about some of the experiences you have had.

Activity: Ask students to complete the following sentence: If I were (person, place or thing), I would be thankful for, because:

Activity: Other ideas for similar activities are:

Be a chair
Be a rolling pin

Be a baseball
 Be a roller skate
 Be a flag
 Be a snowflake
 Be a spoon
 Be a flat tire
 Be a Thanksgiving turkey

Activity: This activity and those following will direct students to make simple comparisons. Encourage students to make their comparisons imaginative and descriptive.

Show students a piece of cauliflower and a bloom from a bridal wreath shrub. Ask: How are a flower from the bridal wreath and the cauliflower alike? How are they different? Have students describe each one in detail — smell, appearance, shape, color, size, growing season, plant family, etc.

Activity: Ask students: How is a footprint like a map? Have them tell in their own words how they are alike and how they are different?

Activity: Ask students: How is a horse like a car? Have them tell in their own words how a horse and a car are alike and how they are different.

Activity: Ask students how a baby is like a flower? Have them describe each in their own words. Find things that are alike and also different.

Other ideas: How is a light bulb like a planet? How is a needle like your head?

A tree is to a yard as a flower is to a

A rock is to a mountain as water is to a

Activity: This activity and those following will instruct students to think of words that seem to be opposite in meaning, but when placed together they describe with great strength. To guide the students with this understanding, ask them to describe how their feet or fingers feel when they come inside after playing in the snow for a long period of time. Try to have them explain the "burning" feeling even though they are very cold. The words in conflict might be "burning cold" which is a strong description of that feeling.

Read *The Bigger Giant* (by Nancy Green, Follett Publishing Company, 1963, U.S.A.) to the class. Ask them to discuss the title. Define the meaning of *bigger*. Define the meaning

of *giant*. When these two words are placed together what do they describe? Describe your feelings when you first heard this title.

Activity: Define the word *mischievous*. Define the word *angel*. Ask the students to think of a story which they have heard, or write a story that would remind them of what these words (*mischievous*, *angel*) would describe? Example: *The Littlest Angel* (Charles Tazewell, Children's Press, 1962, New York).

Activity: Write these words on the board, *beautiful monster*. Ask the students to define each of the words, and then ask the students to use them together to describe something with great strength.

Have students make up their own analogies. This is the best demonstration of thinking skill development. Allow them to demonstrate and defend any analogies that they have produced.

Curriculum Related Activities:

Language Arts—The preceding activities lead to many forms of creative writing, verse, poems, etc.

Spelling words can be used in analogies and metaphors.

Find analogies and metaphors in literature.

Math—Have students be a numeral. Have them tell what happens as different concepts are applied?

Science—Many concepts in science can be enhanced if the students project themselves as being an object of a force in a scientific happening.

Social Studies—Analogies can help make social studies a living experience for the students as they relate, become, and compare.

Art, Music—Analogies could be interesting when used to evaluate and understand art and music.

Physical Education—Have students compare how hockey and football are alike.

Evaluation: Have the students think of themselves as curled up and becoming a baseball. Have them describe the "big game" from the point of view of the ball.

PERCEPTION

Thinking Development Objective: To help students develop a more flexible perception of their environment and greater perception and empathy when considering and interacting with others.

Teacher Note: It is usually a good idea to get the students warmed up with a large group discussion before beginning any activity. Begin by having the students define perception, thus bringing out the students' ideas. Ask questions such as: What are your senses? How do they make life more interesting? Imagine a flower. In how many ways can we appreciate what you might see when looking at a flower?

Activity: Have the students list all of the things they saw on the way to school. Other activities might include listing all that they felt, all that they heard, all that they smelled, all that they touched or that touched them, or all that they have tasted so far that day. Have students compare their lists either in small groups or as a class. Discuss the differences in the lists. Ask why are there differences in the lists? Discuss ways the students might increase their awareness. Tell the students that the discussion will be about sounds the next day and see if the list of sounds is expanded. Did concentration sharpen perception?

Activity: While seated, have the students close their eyes for two minutes. List all the things the students heard while sitting at their desks. Did they hear some things better when their eyes were closed? Did blocking sight enhance hearing?

Have the students try blocking out other senses. Does blocking out one sense sharpen perception of other senses?

Show a short film without sound. Discuss and evaluate the students' impressions of the soundless film. Now show the film with sound. What differences do the students discover? Was their understanding increased? How?

Activity: Begin with a discussion of emotions and how we perceive our own emotions. How can you tell how other people feel? List responses.

Have students find or draw pictures of people or animals that show emotion. How do people act when they are happy, sad, angry, etc. Why do people do certain things when they are angry, happy, etc? When might you want to keep your feelings in control? How can you control what you do when you feel angry, happy etc.? How can you help other people control how they feel, act, or react to you?

Activity: How do people use perception in their lives and work, such as a detective, a doctor, lawyer, salesman, teacher of Braille, a student, a dancer, etc? Which sense does each depend upon the most? What other occupations can you think of that require a special sensitivity or perceptual ability? How do some people adapt their lives to a loss of one or more of their senses? For example, the deaf, deaf-mute, blind, paralyzed, etc. Try for 15 or 30 minutes to live with such a handicap. This may be a good thing for an upper grade discussion, evaluating frustrations which they may have experienced.

Curriculum Related Activities:

Language Arts—Pick a topic; describe it on the basis of your five senses.

List descriptive words relating to sight, smell, taste, touch, and hearing.

Compare perception and emotion — difference between feeling and feelings.

Math—Describe yourself as a numeral and justify your selection.

Use manipulative material to explain mathematical concepts and computations.

Science—Compare human sensations to animal sensations. Develop the understanding that animals feel pain.

Analyze the nervous system and the transmission of perceptual data.

Be an expert witness after an experiment is demonstrated. Describe what occurred.

Social Studies—Develop an awareness of environmental problems.

Discuss how perception can affect communication?

Discuss how perception does affect actions?

Art—Have the students explain how the use of color affects mood and perception.

Ask the students how design can produce mood?

Ask students how texture or unusual materials increases their perception?

What do art masterpieces tell you about values and life style of the people represented in the paintings.

Music—Ask students how rock music utilizes

perceptual stimuli (sound, color, light, etc.)?

Write a script to fit a musical selection.

Ask how ballet combines sight, sound, color, design, and mood?

Physical Education—Ask how perceptual skills relate to mastery of a physical education task?

Have students analyze a physical education task by observation.

Evaluation: Show the class a picture in which people are doing something. Ask students to tell what the people in the picture are doing and how they feel about what they are doing.

MAKING A CODE

Thinking Development Objective: To expand the divergent thinking abilities of the students in the area of symbols and codes, and to increase ideational fluency.

Teacher Note: Help the children to understand that any symbolic communication form represents a code. When a nation of people agree upon common symbols, the code can be said to be written language. A comparison, for older grades, might be made between English symbols and Greek symbols. Help them to understand that anyone can invent a code. When making a code, one takes a set of familiar symbols and substitutes an unfamiliar or new set of symbols.

Example: 0 1 2 3 4 (familiar symbols)
Z Δ Φ Θ Ω (new code symbols)

Now the numeral 34 is written as: ΘΩ

To understand the code you must figure out what each symbol means and then must change each character of the coded message back into the symbols with which you are familiar, the symbols you understand. The steps in making a code are:

1. Write down the familiar symbols.
2. Under each familiar symbol write your new symbol or your code.

3. Write a message in the familiar symbols.
4. Using your code "keys" substitute your coded symbol to express your message.

Activity: For lower grades use numerals instead of letters for the first code experience. Invent a code for the numerals together. Make up riddles that are answered in code. Ask students: What is the date? How old will you be on your next birthday? How many days until Christmas?

Activity: Using circles, have students draw faces. Decide what expression means happy. Have students show which face tells how they feel when: they are in trouble; when they get a present; when they are having a fight with a friend; when they feel hungry; when they feel angry, etc.

Activity: Choose some words that the students can read such as:

dog cat cow Dick Jane (words)

(code)

Write a story using the code instead of the real words. Such as:

..... had a and a
..... likes to milk the

Activity: Tell the students: We have no alphabet letters today. Then have students invent an alphabet. Tell them: We have no numbers. Have students invent a number system.

Activity: As a class, invent a code for the numerals 0 through 9. Put the answers to some arithmetic problems on the chalkboard and let the students check their work by decoding the coded answers into real numerals. Write the date of each day in your numeral code.

Compare Roman and Arabic Numerals. Compare them as two codes. Express all numbers used during one day in the Roman Numeral code.

Activity: As a class make a code for vowels only or nouns, verbs, adjectives, etc. Write messages substituting the code when applicable.

Activity: As a class make a list of code symbols that we use in our written language, such as \$, @, %, &, =, +, #, etc.

Activity: As a class discuss special codes people use such as: sign language, Braille, computer information. Collect as many codes as possible that are in actual use. Possibilities include mathematics, weather information, other languages, international traffic signs.

Activity: Have students match each letter of the alphabet to a color. Send coded messages expressed in squares of color instead of alphabet letters. An example might be:

A = red B = brown C = blue

blue	red	brown
------	-----	-------

 = CAB

Activity: Have students study Indian pictographs. Try to decide what the pictographs say. Have the class invent their own pictographs and send messages to friends.

Activity: Make a code using letters and numbers.

a	b	c	d	e
---	---	---	---	---

B 1 2 3 4 5

a = B1
b = B2
c = B3, etc.

Activity: Have students make a code by using familiar symbols that have been rearranged.

Example: A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z

Count down two letters and substitute for the coded message.

ECV in this code is really CAT.

Activity: Invent a code as a class. Send a message to another class. Try to read each others codes.

Activity: Have students put a message into code by hiding it in an unrelated message. Example:

The message is: MEET ME TONIGHT.

Every third word of the message is a code word, or every fifth, sixth, etc.

Coded message: The track *meet* seemed to *me* very fair *tonight*.

Activity: Have students pretend to be a secret agent. Have them make a code for the letters of the alphabet, then send a message in code to a friend. The following could be duplicated for student use:

A B C D E F G H I J K L M N O P Q R S

Key:

T U V W X Y Z

Key:

Your message:

.....

.....

Activity: Help students find ways to decode a message. Have them put down the code that they think their friend is using. Decode the message. Break the code. What symbols has he used?

A B C D E F G H I J K L M N O P Q R S

Key:

T U V W X Y Z

Key:

His message says:

.....

.....

Activity: Have each class member make up a code of his own. Each day let one person write a message in his own code on the board. If no one can decode the message, have the student

write a "clue" as to the meaning of the message; add as many clues (1 per hour or set any schedule you find usable) as are necessary for the decoding of the information.

Curriculum Related Activities:

Language Arts—Study our written language as a code. Ask students to think of ways in which it can be improved or made more efficient. Have students discuss why vowels are important in breaking a code?

Math—Have students study the codes used in mathematics. Can the class think of better ones?

Science—Ask students what codes are used in science? Are scientific codes international? Why do scientists use codes?

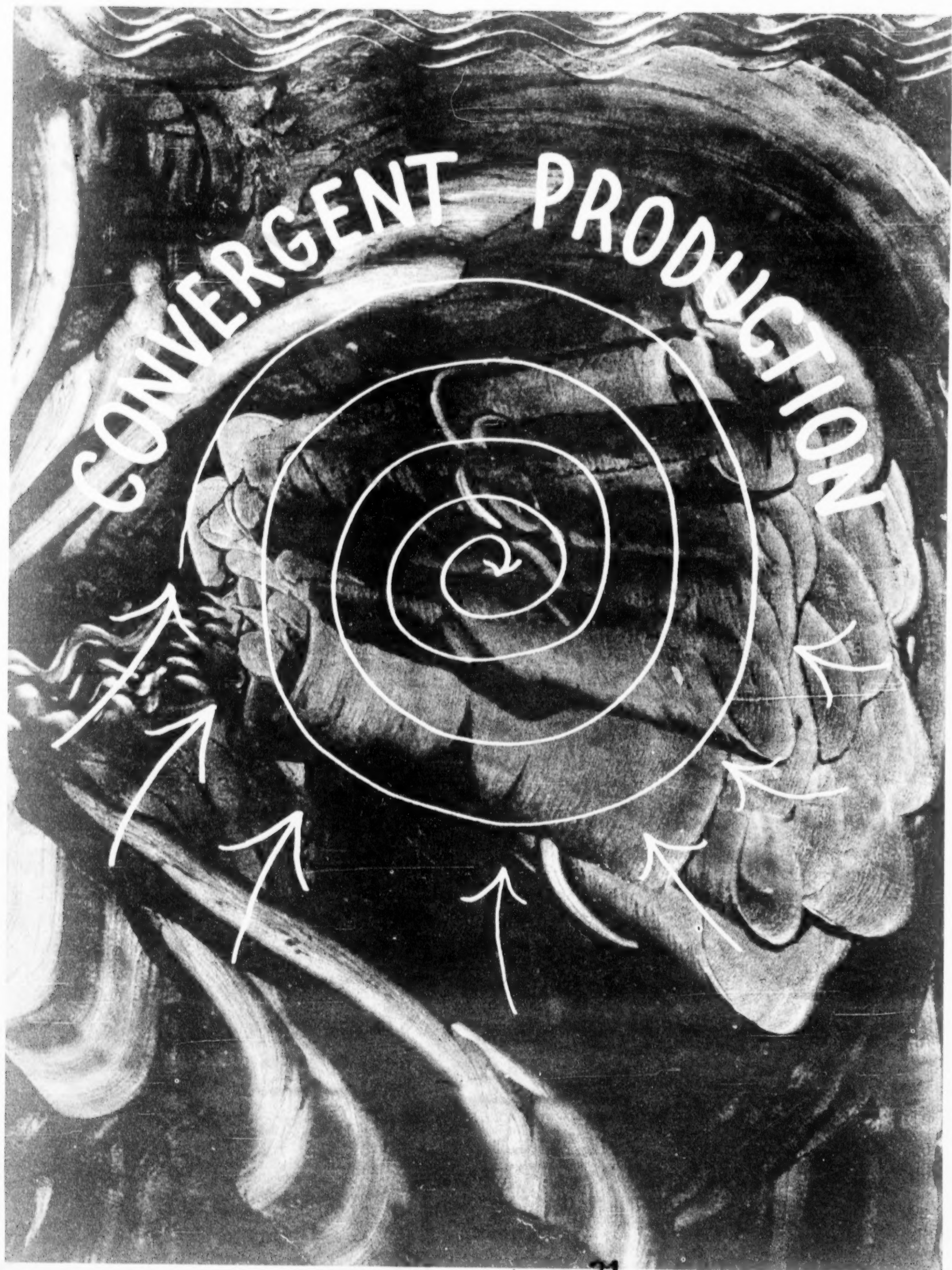
Social Studies—Ask students if there should be a common code for language? What effect would this have upon people? Would it bring peace? How can people who do not speak the same language communicate?

Music—Ask students in what ways music notation is a code?

Art—Ask students to tell how various forms of art and dance can be compared to codes?

Physical Education—Ask students to tell what codes are used in physical education games, i.e., scoring, referee, field of play, etc.

Evaluation: Have students write a code for the alphabet. Have students write a code for numerals from 0 to 9. Write your name, address, and telephone number in code.



"A man who cannot think is not an educated man, however many college degrees he may have acquired."

—Henry Ford

"We teach a subject not to produce little living libraries on that subject, but rather to get a student to take part in the process of knowledge-getting. Knowing is a process, not a product."

—Jerome S. Bruner

*"Education fails unless the Three R's at one end of the school spectrum lead ultimately to the Four P's at the other—
Preparation for Earning,
Preparation for Living,
Preparation for Understanding,
Preparation for Participation
in the problems involved in the making of a better world."*

—Norman Cousins

"If you treat a man as he is he will stay as he is, but if you treat him as if he were what he ought to be, and could be, he will be that bigger and better man."

—Johann Wolfgang Von Goethe

"It must be remembered that the purpose of education is not to fill the minds of students with facts; it is not to reform them, or amuse them, or to make them expert technicians in any field. It is to teach them to think, if that is possible, and always to think for themselves."

—Robert Hutchins

"Thinking is the hardest work there is, which is the probable reason why so few engage in it."

—Henry Ford

"Thinking is the talking of the soul with itself."

—Plato

"Ideas are a dime a dozen. What is usually lacking is someone who can take an idea and give it concrete form."

—James B. Conant

"Few people think more than two or three times a year. I have made an international reputation by thinking once or twice a week."

—George Bernard Shaw

"SEA SHELL"

By Jona

First Grade

GUIDELINES FOR CONVERGENT THINKING

"Convergent Production is the generation of information from given information where the emphasis is upon achieving unique or conventionally best outcomes."^{*}

Convergent thinking is a process of selection. Given many alternatives (divergent thinking) a person must, according to his way of thinking, select the best alternative.

Convergent thinking makes a single decision, judgment, or solutions; convergent thinking is definitive, is task oriented, or is goal oriented.

For example, when given the question, "What is your favorite color?" students will all be dealing with one central set of concepts. The students now need to converge their thinking around one set of facts in order to discuss the problem. Given ten people, it is possible to anticipate ten different responses yet each individual must converge or narrow his thinking to express his choice. This narrowing to one selection in a logical manner is convergent thinking.

^{*}Guilford, J. P. Progress in the Discovery of Intellectual Factors. In C. W. Taylor (Ed.) *Widening Horizons in Creativity*. New York: Wiley & Sons, 1964, 261-297.

Evaluate convergent production by referring to the following checklist. While there does not need to be the same answer from all people, effective convergent production requires consideration of the following criteria:

Selection: Has a decision or a choice been made? Has each student made a selection or choice?

Considerations Does each decision or selection show concern for related information and desired outcomes?

The following teaching approaches encourage convergent thinking:

- Encourage students to consider all the possibilities.
- Encourage students to narrow their possibilities to one selection in a logical manner.
- Encourage a selection of the best alternatives to each person's way of thinking.
- Encourage a logical or a scientific thinking process
- Ask students why they choose as they do, why they think as they do, why they act as they do.

Convergent thinking is vital to the problem solving process. It is with this attitude that scientific inquiry becomes meaningful and productive.

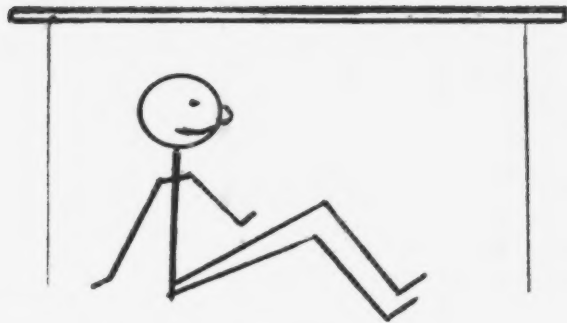
CONTEXT MEANING

Thinking Development Objective: To help build convergent thinking skills by using words in sentences or illustrated context. This increases the student's ability to determine meaning through contextual clues.

Teacher Note: Words communicate information. Words often have more than one meaning. These two concepts must be presented to the class so that all children understand the concepts upon which the exercises are based.

Convergent thinking skills are demonstrated through the selection of a given word, put in a context of the student's choice. Do several examples together as a group. Then let each student try to illustrate a word. Share the word of each student with the group (accept student reasoning and *all* responses).

Activity: Write or say a word and ask students to DRAW the word meaning. Example: the word *under* might be drawn as



Have each child think of a word and draw the word that he has decided upon. See if the class can "read" each individual child's word picture.

Activity: Have students write a story, substituting pictures for words when possible.

Activity: Have students either individually, in pairs, or as a group, write a story in pictographs as early man wrote. Use *only* pictures to convey their message.

Activity: List on the board or give a verbal example of a word that has more than one meaning, i.e., run, bark, ride, play, etc. The use of words whose spelling does not change as context meaning changes, forces students to use contextual surroundings as a word meaning factor.

1. List or say the word.
2. Discuss possible meanings.
3. Give examples of a word having a different meaning in different sentence contexts.
4. Determine what the word means in *this* particular sentence.
5. Let children repeat the process with another word.
6. Let children use a word in more than one context.
7. Have children find words that have more than one meaning.

8. Make up your own definition or definitions for each spelling word.

Curriculum Related Activities:

Language Arts—Chart words with multiple meanings.

Select one of several word definitions and write a story.

Analyze spelling words.

Check word meanings on the basis of context clues.

Math—Use context to define mathematical terms.

Write story problems.

Discuss symbols as they communicate information about mathematical processes and become word substitutes.

Discuss the mathematical formula as it relates to the mathematical process. How can a formula be used as a context clue?

Science—What context clues do scientists use to determine the makeup of elements?

How does a doctor use context clues to diagnose an illness?

Social Studies—Use symbols as word substitutes on maps or graphs.

Define unfamiliar terms by using them in context.

List and define foreign words or unfamiliar words relating to cultural studies.

Chart foreign words as they relate to words in our spoken language.

Art—Draw how certain words make you feel.

Define words by using pictures.

Use color, texture, and design to illustrate words dealing with mood or emotion.

Music—Analyze expression in music as it relates to the meaning or mood produced by music such as loudness, softness, instrumentation, tempo.

Listen to *Peter and the Wolf* by Tchaikowsky. Discuss instrumentation as a context description. Make illustrations showing what the music meant to the listener.

Physical Education—Discuss words as they define actions, skills, or directions relating to games or athletic events.

Evaluation: The word *can* has more than one meaning. Write sentences in which *can* is shown to have more than one meaning.

HOW ARE THINGS ALIKE?

Thinking Development Objective: To aid the students' development of convergent thinking skills by making comparisons.

Teacher Note: These activities help students to see likenesses and differences in things. The activities help them to relate seemingly unrelated objects. The activities are arranged so that:

1. Visual or pictorial displays are listed first.
2. Categories of two items are used first. Younger students would need to work with pictures. Older groups can work with words. The student's own work is the best demonstration of thinking skill development. When students can make up their own exercises to challenge the class then the student has developed convergent thinking ability.

Activity: Select two pictures. Display the pictures. Ask class members to list as many ways as they can in which the two pictures are alike. In how many ways are they different?

Activity: Select three pictures. Pictures of a specific item are easiest to use. Display the pictures for class discussion. In how many ways are the items alike? In how many ways are the items different?

Activity: Have class members draw or select two or more pictures. Display to the class. Can the group think of any reason for selecting these as being alike?

Activity: Label a chart — *living things*. Let children collect and share pictures of things that are alive.

Activity: Present the class with two words. How are the words alike or different? Example: though, thought.

Present the class with three words. How are the words alike or different? Example: reach, dead, heart.

Play "Stump the Class". Have a student list 2, 3, or 4 words. Can class members decide why any group of words was selected as being

alike or different? Example: boy, flower, dog, tree.

Activity: Present the class with four pictures in a series. Indicate the one that does not belong. Tell why one picture does not belong with the other three.

Now have the student draw four objects — three alike and one that doesn't belong. How are the three related? Why is the one item unrelated?

Activity: Present one, two, or three pictures that are alike. Supply one more thing that would be like the others.

Draw three pictures that are alike. Play "Stump the Class". How many think could be added to make four like items?

Curriculum Related Activities:

Language Arts— How are library books alike or different?

How are novels alike?

How is a mystery story different from a book on dinosaurs?

Math—How is addition like multiplication?

How is addition different from subtraction?

How are subtraction and division alike?

Science—How is rain like snow?

What are the differences between Fall and Spring?

How are air and water pollution alike?

How is a magnifying glass different from a mirror?

Social Studies—Using two newspapers that report from the same area, explain how two news reports are alike and/or different.

How are all the community workers alike?

How are two states alike?

How are boys and girls alike no matter where they live in the world?

Art—Have the children all look at and then draw the same object. Are the students'

pictures alike or different? (A film entitled "Four Artists Paint a Tree" is a good source for the above activity.)

Music—How is classical music different from jazz?

How is the violin like the cello or like the piano?

Physical Education—What games are like baseball?

What are the differences between hockey and football?

Evaluation: How is a pear like an apple?

CATEGORIES

Thinking Development Objective: To help students categorize and select best alternatives in a logical manner.

Teacher Note: Identifying group names helps students to increase their ability to see relationships. Identifying groups of related ideas is a basic skill in outlining and can be introduced by finding family or class names to be used in categorizing actual objects.

Activity: Have students cut out pictures that emphasize certain colors. Put these pictures in correct color categories on a bulletin board.

Activity: Put a long list of nouns on the board or have several pictures or collections of things that will obviously fall into categories. Work as a class to put either the words, the pictures, or the collection of things into groups. Give the groups a name.

Activity: Cut from magazines many pictures such as animals, foods, means of transportation, etc. Arrange pictures in several different piles. Have the student rearrange the piles, placing pictures he thinks are alike together. Then let him describe how they are alike by listing words or short phrases. Now have him pick or select the word or phrase he thinks is the best class or family name.

Activity: Keep a large collection of pictures for students to categorize in their spare time.

Activity: Make a grid for your class to complete. It will be necessary for individual teachers to adjust the complexity of the grid according to grade levels.

Example 1: Fill in this grid with either picture or words.

	red	green
Food		
Toys		

Example 2: Have the students fill in each square with a word that begins with the letter on the left and fits the category on the top.

	birds	cars	food	clothing	animals
G					
I					
R					
L					

Example 3: A grid can also be made to apply to any area of study.

	Topaz	Diamond	Pearl	Ruby
color				
hardness				
where				
found				
birthstone for what mo.				

Activity: Have each student make up four categories

Example: Things that are round, things to crawl through, things made from flour. Then have everyone pass their papers to a classmate. Have each class member then list as many

things as possible for each category page they have received.

Activity: Put pictures of fruit, vegetables, toys, stuffed animals, etc., in separate boxes. Pass the boxes around the room and have each student list class names for each box.

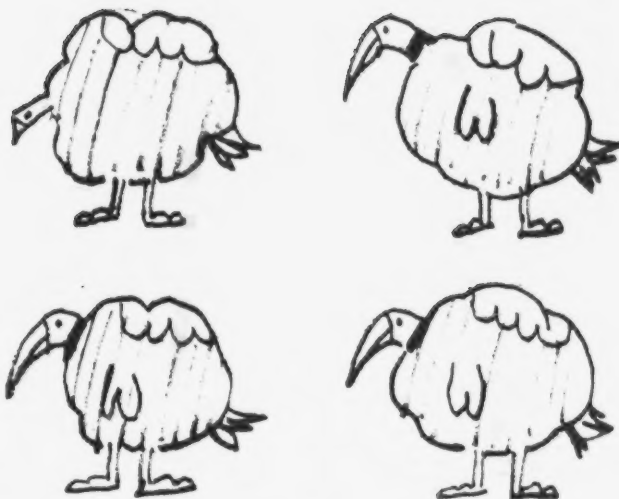
Activity: Have empty boxes (either real ones or some drawn on paper) which are labeled, i.e., toys, round things, things made from wood. The students should put things in these boxes that will match the labels. Then the procedure could be reversed. Have the boxes already filled and the class should supply an appropriate label. Remember pictures can always be used in place of words.

Activity: Have the students bring a box of five things they have gathered from home. These five things are to have something in common. Ask the classmates to guess the common feature.

Activity: Tell the following story to your class.
I would like to tell you a story today about a group of boys and girls who went exploring. They went for a walk in the forest. There were many exciting things to see, to hear and to smell. But the most exciting of all was a big strange rock. The rock wasn't strange looking. It was strange sounding. It sounded as if it were talking. The boys and girls couldn't believe their own ears. They stopped. They listened. They walked all around the rock and finally decided to give it a big push. Just as they did, some strange creatures scurried from under the rock.

"Hello! We are Mucklers!" they shouted. "Help us. We can't find our families. We don't know where to go. We look so much alike that we can't tell to which family we belong. Help us. Please."

So the boys and girls all sat down and studied each Muckler. They tried to put the Mucklers into the right family. Here are four of the Mucklers. See if you can tell which Muckler does not belong to this family. Why?



Now make up some Mucklers of your own and see if you can stump a classmate.

Activity: These words can be given to each student or put on the board. Here are some groups of words. First look at each group. Think. Then write how many ways each group is alike. List as many class names as you can for each group. When you have finished, select or star the best class name for each group on the board.

class name	how they are alike?
A. puppy kitten fawn lamb calf colt	
class name	how they are alike?
B. apple pear peach plum banana	
class name	how they are alike?
C. brown red orange yellow green	

class name	how they are alike?
D. bicycle horse airplane bus stagecoach	
class name	how they are alike?
E. circle triangle square rectangle oblong	
class name	how they are alike?
F. compound simple smooth jagged rough	

Activity: Write the list of 12 words below on the board. Have the students make four category headings. Put each word under one of the four headings. You must put every word in a category. The word lists do not need to be equal. Use each word only once.

picture book desk flag hat cage record
box rug light basket map

Now have the students make up 12 words of their own. A classmate could categorize this list.

Encourage unusual categories — things that would fit through a keyhole or things that belonged in secret places. The more seemingly

unrelated the words seem to be, the greater the challenge.

Curriculum Related Activities:

Language Arts—Categorize the weekly spelling list.

Categorize words into beginnings,, endings, blends, vowels, consonants.

Categorize books into types of literature.

Math—From a given list of story problems have the students categorize the problems according to the skills required.

Science—Have students bring in objects of nature and categorize them.

Make and categorize collections or displays.

Social Studies—Have the students categorize the various offices in city, county, state, federal, and international governments.

After a discussion about pollution, have the students categorize the causes, the effects, and the problems.

Art—Have the students categorize famous paintings into the different eras.

Music—Listen to various records, have the students categorize according to types; jazz, rock, country, classical, western.

Categorize music according to tempo or mood.

Physical Education—From a list of games, categorize according to skill required, to equipment used, or to age of a person best able to play.

Evaluation: Have the students categorize a variety of either pictures, objects, or words, and explain their choices.

PATTERNS

Thinking Development Objective: The student's convergent thinking will be enhanced as he is asked to recognize patterns and see (understand) logical sequences or when he creates his own pattern sequence and explains the pattern he has created.

Teacher Note: The skill involved is a convergent learning process. As each sequence is given, the student determines why the answer he has given is the best answer. He then should be able to defend his response and give reasons for his given answer.

Activity: There is some kind of error in each of the following examples. Have the students correct the mistake or fill in the item that has been omitted. Examples may be adjusted to grade level.

1. 1,2,3,4,5,7,8,9
2. 9,8,7,6,4,3,2,1
3. A, C, E, G, I, K, M
4. apple, box, cat, zebra, elephant
5. yellow, yellow-green, green, blue-green, blue-violet
6. home, community, state, nation, street, world
7. $H + H = H_2O_2$
8. mohair, wool, nylon, cashmere
9. rayon, diamond, topaz, opal, jade

Activity: Each of the following sequences have a blank. By looking at the pattern, determine what should go in each blank.

1. 100, 200, 300, ...
2. 10, 20, 30, 40, 50, ...
3. tell, bell, cell, fell, ...
4. cheat, heat, ...at
5. 497, 498, 499, 500, ...
6. $1/1$, $1/2$, $1/3$, ...
6. bat, bag, bad, ...
8. tree, board, carpenter, ...
9. seed, plant, fruit, ...
10. sea green, apple blossom pink, robin egg blue, ...

Activity: Each pattern has a process. Something needs to happen to change the pattern or to make it correct. Have the students work the following:

1. $2 \dots 2 = 4$
2. 1st grade 2nd grade
3. enemy friend
4. steam water
5. water ice
6. ice steam
7. coal energy
8. day night
9. coal pollution
10. electricity light

Activity: Finding the averages among numbers in arithmetic is an addition then a multiplication process. Try teaching averages by having the class discover the pattern and the process. Discuss the meaning of average; list as many

averages as the class can think of — batting averages, average number of hits, average grade, average attendance, etc. Tell the class you are going to find several averages. Tell them they must discover how to do it by finding a pattern. You might then have them write a rule. It might take them a day or two, leave them alone. When they do see the pattern, most will remember how to compute the arithmetic average.

Put some examples such as these on the board.

$$\begin{array}{r} \text{A. } 2 \\ 5 \\ 5 \\ \hline 12 \end{array} \qquad \begin{array}{r} 4 = \text{ave.} \\ 3 \overline{)12} \end{array}$$

$$\begin{array}{r} \text{B. } 6 \\ 1 \\ 6 \\ 7 \\ 5 \\ \hline 25 \end{array} \qquad \begin{array}{r} 5 = \text{ave.} \\ 5 \overline{)25} \end{array}$$

$$\begin{array}{r} \text{C. } 4 \\ 6 \\ \hline 10 \end{array} \qquad \begin{array}{r} 5 = \text{ave.} \\ 2 \overline{)10} \end{array}$$

$$\begin{array}{r} \text{D. } 100 \\ 300 \\ 500 \\ \hline 900 \end{array} \qquad \begin{array}{r} 300 = \text{ave.} \\ 3 \overline{)900} \end{array}$$

Once the class has discovered the pattern and the rule, find several averages that relate to your class. What is the average attendance of our class for the week? What is the average number of blocks that our class members must walk to get to school? What is the average number of books read by class members during the week?

Activity: Read a story or a set of instructions to the class leaving out an important part. Tell the students the story is not complete. Have the students discover the missing part.

Example: Playing baseball

Get proper equipment such as bases, bats, ball, etc.

Divide into equal groups, with 9 on each team.

Assign each person a position such as catcher, pitcher, 1st base, 2nd base, etc.

Determine who is to bat first.

Pitch the ball.

Run to 2nd base, to 3rd base, and then to home.

Have the next batter come up to bat.

Activity: Find the missing part or the missing information.

Recipe for scrambled eggs:

Take 3 eggs

½ teaspoon butter

Dash of salt, pepper

Use a fry pan and spatula

Beat until well done

Murder Mystery:

Mr. X is found dead on the front lawn.

Mrs. X is gone and so are all the servants.

The police are notified.

The weapon is a roller-skate.

The police conclude that the death was accidental.

You know the police are incorrect; you know about a missing clue which is

Activity: Have students bring and share their own patterns to stump the class. They may use a

story problem, pattern directions, any sequential matter with a pattern that students can identify and defend.

Curriculum Related Activities:

Language Arts—Look for patterns in poetry, prose, limericks, Haiku, etc.

Science—What patterns are seen as you study the growth of an embryonic chicken in egg, the water cycle, or the digestive system.

Social Studies—How does environment affect life or development of society?

Develop a sequence pattern which might describe events leading to war and peace.

Art—When might you want to use repeating patterns?

Make samples of textures.

Music—Clap a rhythm. Have the class write the rhythm down. Discuss rhythm as a pattern.

Find themes in musical selection. What are the variations on the theme? Write your own theme and its variation.

Physical Education—Set up an exercise routine.

Evaluation: By convergence the student will discover logical pattern and his understanding will be shown by his ability to develop his own sequential patterns. Using letters of the alphabet, have students make up as many patterns as possible.

SEEING TRENDS

Thinking Development Objective: To help students to develop convergent thinking skills by organizing information and by arranging ideas, words, and numbers in logical sequence.

Teacher Note: Before starting activities show the students a group of pictures that would demonstrate the concept of logical order.

Example: Show a picture of an empty nest; a picture of a baby bird, a picture of a nest with an egg in it. Have the students arrange the pictures in a meaningful, sequential order.

Or write examples such as the following on the board and work them together.

Example: nairt = train labl = ball
chased the The dog cat.

1, 2, .., .., .., .., .., .., ..
300, 250, .., .., .., .., .., ..

Activity: Supply the missing season:

1. Summer turns into
2. Fall turns into
3. Winter turns into
4. Spring turns into

Activity: Fill in the missing numerals:

1. 2, 4, 6, 8, .., .., .., .., ..
2. 5, 10, 15 .., .., .., .., .., ..
3. 65, 100, .., .., .., .., .., ..
4. 50, 100, 150, .., .., .., ..
5. 7, 14, 28, 56, .., .., .., ..
6. 8, 48; 4, 24; 2, 12; .., ..; .., ..

Activity: Place the following words in a meaningful trend.

1. Tuesday, Sunday, Friday, Thursday, Monday, Saturday, Wednesday
.....
(put arrangement here)
2. grandfather, baby, mother, 8 year old, teenager
.....
3. elephant, pig, mouse, cat, cow, flea
.....
4. hot pink, pink, red, white, maroon
.....
5. rainy, windy, sunny, cloudy
.....
6. university, nursery school, elementary, high school, junior high, kindergarten, graduate school
.....
7. metropolis, county, town, city, nation, continent
.....
8. half-gallon, pint, gallon, half-pint, quart
.....
9. Thanksgiving, Labor Day, April Fool's Day, Fourth of July, Columbus Day
.....
10. moist, parched, dripping, saturated, wet
.....

Activity: Finish the sentences. Allow students to use words of their choice. Have them read their sentences back to check for complete and meaningful sentences.

1. The bird flew
2. The dog chased
3. In the fall the leaves
4. I'm so hungry I could eat a
5. If I touch a stove I may

Activity: Read the following sentences and decide which sentence should come first and write a number 1 to the left of the sentence. Put number 2 by the sentence that should come second, etc.

- | | |
|------------------------|--|
| Have breakfast. | Jack climbed the beanstalk. |
| Leave your house. | Jack chopped down the beanstalk. |
| Wash your face. | Jack's mother threw the beans out the window. |
| Wake up. | Jack ran from the giant's house. |
| Get out of bed. | Jack traded the cow for a handful of beans. |
| Get dressed. | Jack took the hen that laid the golden eggs. |
| Sit at your desk. | Jack climbed down the beanstalk. |
| Arrive at school | Jack and his mother were very poor. |
| | Jack woke up and saw a huge bean stalk covering his window. |

Activity: Fill in the missing fractions.

1. 1/1, 2/2, 3/3, .., .., .., .., ..
2. 2/5, 4/10, 8/20, .., .., .., .., ..
3. 5/6, 10/12, .., .., .., .., .., ..
4. 5/8, 1 1/4, 2 1/2, .., .., .., .., ..
5. 21, 10 1/2, .., .., .., .., .., ..

Activity: Unscramble the following sentences.

1. slocoh garn hte lebl.
2. liJl lihl dan kcJa newt pu eht.
3. eactpric seakm-a dogo yalper.
4. aehsdc pu eret a ogd tca heT het.
5. ewtn rou no pirt lsacs a dilef.

Activity: Have the students choose ten sentences that tell the outline of a story. Scramble the sentences and let a neighbor see if he can put them in order.

Curriculum Related Activities:

Language Arts—Review the beginning and middle of a story and following the same

trend, write your own ending.

Math—Illustrate the steps in addition, subtraction, multiplication, or division.

Scramble a story problem. Have the class arrange this in the right order.

Scramble the order of Roman numerals for the class to unscramble.

Science—List the steps in an experiment.

Follow the path of an electric current from the energy source to the outlet.

Follow the path of blood circulation through the body..

Social Studies—List the important events of American History from 1940-1950.

Art—Create a color wheel showing the development of shades.

Communicate with the class and tell them how to make something step by step.

Music—Listen to classical music. Explain the story the music is telling.

Physical Education—Have students do research to find how sports and games have evolved and changed through the years. They could also forecast how they might change in the future.

Evaluation: Supply the students with a set of related information. Example: A news item from a local paper. Have the students supply the background information from their imaginations as to what previous events would have logically led up to the news item.

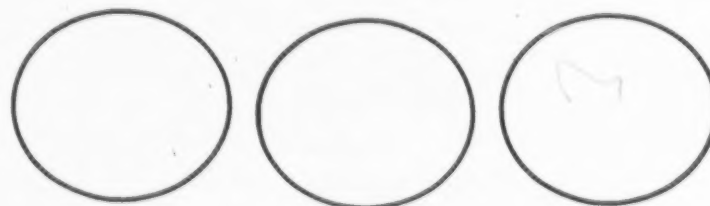
WRITTEN DIRECTIONS

Thinking Development Objective: To help the student develop a logical systematic process for writing directions.

Teacher Note: A discussion of why it is important to read and follow written directions might help the students to become more involved with this kind of exercise. Written directions may be on a ditto, listed on the chalkboard, or for lower grades, written on a ditto with each direction placed in a separate square. When you pass out a copy of this exercise in a ditto form, or when writing it on the board, be sure that the exercise is on the reading level of your students. Be sure, also, that no verbal directions, except for your initial instructions, are given. Use the following examples to help you to make written directions suited to your group of students.

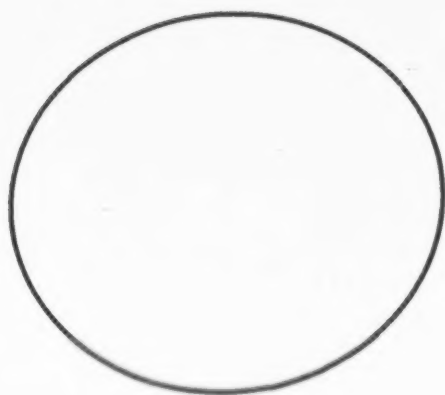
Activity: Written Directions (to be dittoed).

1. Print your name on this line
2. Draw a line under every word in sentence 2.
3. Draw three circles. Color the first circle red. Color the second circle blue. Color the third circle green.

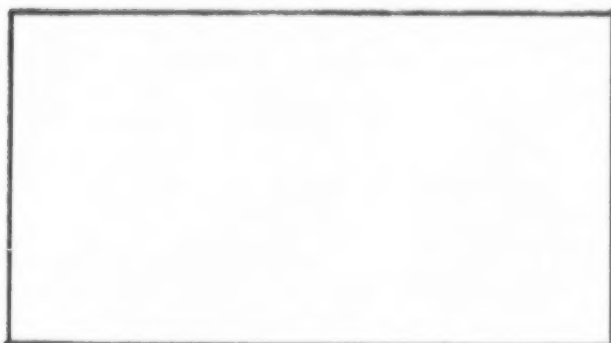


4. Write a color word on this line
5. Write the name of your school on this line
6. Draw a line under the vowels in your school's name as written in sentence 5.

7. Write the name of your city or town on this line
8. Put an x over every consonant in the name of your city or town as written in sentence 7.
9. Put an arrow on both ends of this line.
.....
10. Make this circle into a smiling face.



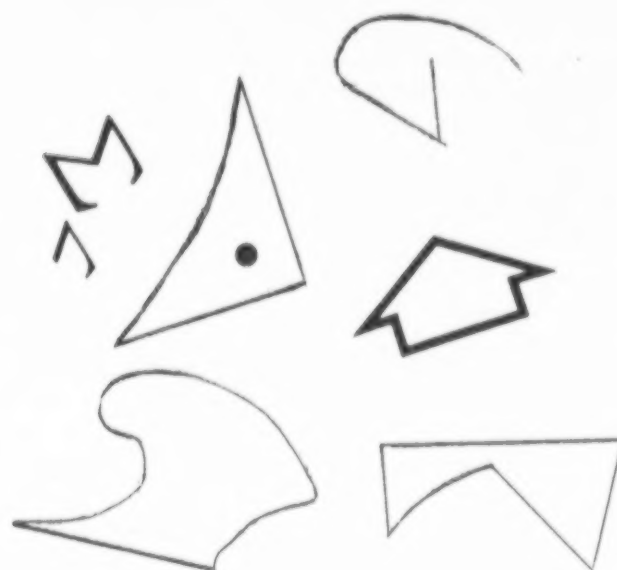
11. Draw three different kinds of fruit in this rectangle and color each fruit a different color.



12. Draw two eyes side by side. Put four eyelashes on the left eye. Put three eyelashes on the right eye.
13. Turn your paper over and draw a picture of yourself. Under your picture print your name. Under your name write down three nice things about yourself.

Activity: Before beginning the following activity, work with the students giving them simple oral and written directions to follow. Discuss the importance of accurate directions. Ask the class to describe how something is done step by step. How do you go about sharpening a pencil? Have a student follow exactly what the other students tell him to do, assuming that the student following the instructions has *never done this before*. Assume that the person being given the instructions has had no prior information.

Activity: Have a student go to the chalkboard. Show the rest of the class a picture of a simple object or a geometric shape. Have the students in the class tell the student at the board how to draw what they have seen. Some examples of simple shapes or objects might be:



The student at the board must not have seen the object to be drawn; they must rely on instructions as given by class members. Each

class member can make only one statement at a time.

Activity: Suppose that there is a new student at school and you want to give him written directions describing how to get to your house. He will have to pass the school, so start your instructions at the school and describe in writing how to locate your home.

Activity: Have your class make an area map showing the entire area that feeds into your school. Have one student stand at the map and try to follow directions as given by another student.

Activity: Write directions for:

1. Folding an airplane.
2. Cutting a jack-o-lantern.
3. Playing a game.
4. Tying a bow.
5. Starting a campfire.
6. Maneuvering a skateboard.
7. Getting to the store.
8. Getting to town.
9. Getting from here to the nearest airport.
10. Getting from here to where your father works.
11. Getting from here to where your mother works.
12. Writing a check.
13. Coloring an Easter egg.
14. Finding the principal's office.

Curriculum Related Activities:

Language Arts—Have students find and study examples of written directions. Ask them to pay special attention to structure and vocabulary.

Ask students to write directions for the best way to study spelling.

Math—Have students write directions for different mathematical processes.

Story problems are written directions. Have students write their own story problems.

Science—Have students write up their own directions for doing an experiment.

Social Studies—Study the history of writing and how written directions have affected history.

Art—Have students write directions on how to make a color wheel or an object of art for their grade level.

Music—Have students write directions on how to play a musical instrument.

Have student write directions telling how to play musical chairs.

Physical Education—Write directions on how to play a new game, or develop muscles.

Evaluation: Have each student write directions for finding his house.

DICTATION

Thinking Development Objective: To help the student develop logical sequence and order in giving the following dictated directions.

Teacher Note: This exercise must be given orally since it is an exercise in listening. As the students increase in their ability to listen, you may want to increase the number of steps in the directions given.

Activity: Extend the list below to include any activity suitable to your classroom.

1. (Call a student by name), will you please go to the front chalkboard

and print your name, then return to your seat?

2., will you stand up, walk around your desk, then sit down?
3., will you go turn off the lights, then go back to your desk and sit down?
4., remain in the room, but go over and open then shut the door. Then return to your seat and sit down.
5., go and turn the lights on, return to your desk, walk around your desk once, sit down on your chair.
6., stand up, walk all around the room, return to your desk, pick up your

pencil, take it to the sharpener, sharpen your pencil, return to your desk but remain standing.

Activity: Ask each student to give a direction to a friend. Continue the activity until each student has had a turn to follow a direction and to give a direction.. Evaluate those that were most interesting, easiest to follow, most clearly stated, etc.

Activity: Since this is a listening-writing exercise, it must be geared to the writing ability of your class. The first few sentences require drawing and can be used by students who lack the ability to write words. Begin the activity by saying, "I will tell you what to do only once." Dictate each direction only once:

1. Draw a picture of a small, round ball.
2. Make the ball you just drew look like a shining sun by drawing lines around the outside of the ball.
3. Draw a pumpkin.
4. Turn your pumpkin into a jack-o-lantern by drawing a face on it.
5. Draw a Christmas tree and put a yellow star on top of it.
6. Print your name on the top right hand corner of your paper.
7. Put three X's under your name.
8. Under the middle of the three X's under your name draw a circle.
9. I will say three words. Write down each word. The words are: bed, dog, cat.
10. I will say five words. Write only the words that I say that tell the color of something. The words are: red, table, green, food, yellow.
11. I will say a short sentence. Listen to the sentence and write only the last word of the sentence. The sentence is: Today is a good day.
12. I will say a short sentence. Listen to the sentence. Write the last two words of the sentence. The sentence is: Tomorrow is my birthday.
13. Write the name of the state in which we live. Circle all of the vowel letters in the name of our state.

14. Listen to the sentence. Write the whole sentence on your paper. The sentence is: On Christmas we eat turkey but some people eat ham.

15. Listen to these words: Write down only the words that name a fruit. The words are: apple, peach, rug, pear, telephone, cherry.

16. Listen to the following words. Write down any word that I say that begins with the letter D. The words are: down, ball, davenport, door, pink, doll.

Activity: Have each student give a direction for other class members to follow.

Tell the class to write or draw something.

Write a direction. Read it only once to a friend.

Evaluate: Was your direction clear? Could you listen and follow the direction? Was your direction too complicated?

Curriculum Related Activities:

Language Arts—Have a student give oral directions on how to use the telephone correctly.

Math—Have the students dictate original story problems to the class to solve.

Have a student dictate to the class a series of mixed mathematical steps.

Science—Have one group of students give oral directions for performing a science experiment to another group of students.

Social Studies—Have a student play the role of a director and give directions to a group or to another student describing how they should act in the role of an historical figure.

Have a student play the role of a director and give directions to a group telling them how they should re-enact an historical event.

Art—Give a student an object and have him describe the object to the class and have them attempt to draw the object as it is described. The first time allow no questions or talking except by the person who is telling about the object. The second time, allow questions and see if there is

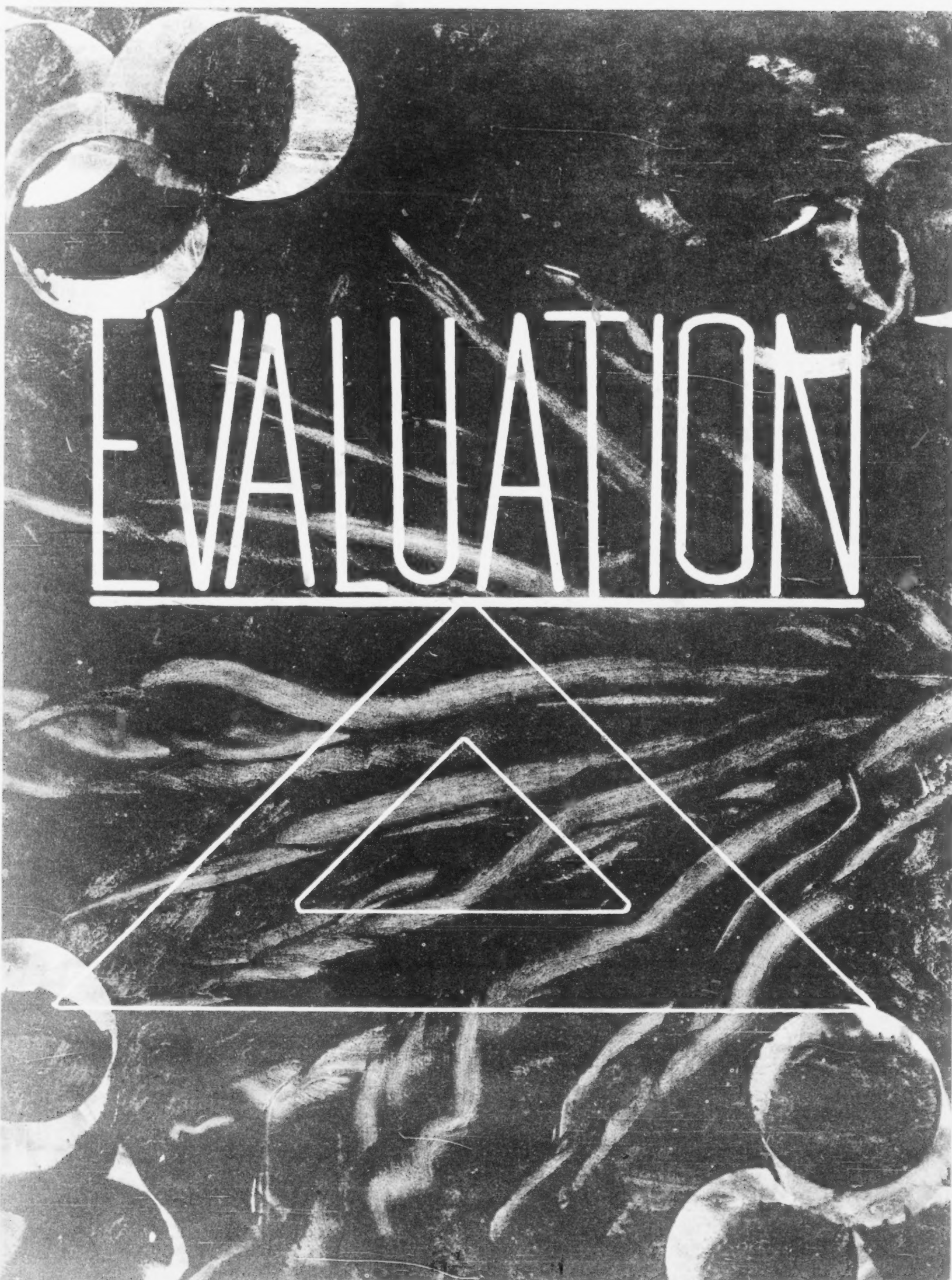
an improvement with the increase of communication.

Music—Have students give directions on how to play a musical instrument. Have students give oral directions on how to sing a particular song.

Physical Education—Let each student give a series of commands such as run, walk,

crawl, skip, stop. Have students give directions for an original relay or game.

Evaluation: For a game of Follow the Directions, give each student the opportunity of giving directions to the class. You could divide the class into groups of five and let each child have an opportunity to give directions to his group.



EVALUATION

"All too often we are giving our young people cut flowers when we should be teaching them to grow plants. We are stuffing their heads with the products of earlier innovation rather than teaching them to innovate. We think of the mind as a storehouse to be filled when we should be thinking of it as an instrument to be used."

—John W. Gardner

"Actually, it's not important for us to spend a great deal of time evaluating other people. What's very necessary is that we spend time evaluating ourselves and that we set up our schools so that children can spend a great deal of time evaluating themselves. It's not what other people say of you that's terribly important; it's your impression of yourself, relative to others and to everything else."

—William E. Glasser

"Secondary as well as elementary teachers must learn to place higher importance on persons than on subject matter; to realize that subject matter is only means to achieve self-actualization of people."

—Ralph C. Norris

"When we talk about intelligence, we do not mean the ability to get a good score on a certain kind of test, or even the ability to do well in school; these are at best only indicators of something larger, deeper, and far more important. By intelligence we mean a style of life, a way of behaving in various situations. The true test of intelligence is not how much we know how to do, but how we behave when we don't know what to do."

—John Holt

"As students find the teacher relevant and the school relevant, they will fight to become involved."

—Raymond Houghton

"If the aim of intellectual training is to form the intelligence rather than to stock the memory, and to produce intellectual explorers rather than mere erudition, then traditional education is manifestly guilty of a grave deficiency."

—Jean Piaget

"BURNING FIRE"

By Tina

First Grade

GUIDELINES FOR EVALUATIVE THINKING

Evaluative Thinking — reaching decisions or making judgements concerning the goodness, correctness, suitability, adequacy, desirability, etc., of information in terms of criteria of identity, consistency and goal satisfaction.”*

These thinking activities were designed to help develop the evaluative process. This is a most vital area of productive thinking. It is an area often overlooked in our present day educational institutions. Teachers may evaluate but this thinking process is not incorporated into curriculum. Evaluation is necessary before any decision can be made or any plan formulated. Creative ideas have very little value in and of themselves. Ideas must be evaluated as to practicality and reasonability before they can be utilized as a course of productive action or discarded as inappropriate. The thinker who is enthusiastic about everything seldom gets anything done. Priorities are the basis of planned and productive acts.

You analyze evaluative thinking processes by referring to the following criteria:

Suitability: Are actions, plans, or products suitable to the group, the materials or the situation? Discuss why or why not.

Workability: Can action, plans or products be completed within the given framework or are there impracticalities? What alternatives might we consider? What are our present or future organizational needs?

Goals: Are we meeting our needs as a group or as individuals?

Are we utilizing materials, time and personnel? Is this the best way to reach our goals?

Some evaluative teaching skills might be illus-

trated by referring to the following check-list:

Suitability: Did students:

- Evaluate needs
- Consider feelings and goals of others
- Value himself and his own efforts
- Identify and capitalize upon his own strengths
- Identify and capitalize on materials at hand
- Identify and capitalize on spatial considerations

Workability: Help students to:

- Develop independent trial and error
- Learn from errors
- Use mistakes to develop confidence
- Value the efforts of others
- Consider the talents of others when inter-relating
- Identify and capitalize on the strength of others
- Apply the knowledge of their environment to better deal with problem solving situations

Goals: Encourage students to:

- Determine goals
- Establish priorities
- Try to keep ends in mind
- Arrive at judgements in a logical manner
- Consider alternatives

Evaluation is an important part of the entire curriculum. Evaluate individual effort, group process and group or individual production. Evaluate with individuals, with small groups and with large groups.

FEELINGS

Thinking Development Objective: To develop evaluative thinking skills and to help students

*Guilford, J. P. Progress in the Discovery of Intellectual Factors. In C. W. Taylor (Ed.) *Widening Horizons in Creativity*. New York: Wiley & Sons, 1964, 261-297.

have better rapport when relating to peers by helping them evaluate emotional reactions of others as well as their own.

Teacher Note: Students are often hesitant to admit that they are angry or fearful or sad. This is

especially true with ultra-sensitive teens and pre-teens. A divergent thinking activity such as the following may help them to evaluate feelings and experiences openly.

Activity: Tell the students: Class, I saw a little boy crying very hard this morning. What do you think might have been wrong? What could have happened? Try to get ideas from most of the class and then encourage some to tell about an experience they can remember when they were little or when they were very, very unhappy or very, very happy. Accept each statement as a fact. Don't agree or disagree with the situation that provoked the emotion.

Activity: Teachers should find or draw pictures of people whose faces show strong emotion such as anger, happiness, sadness, fear, surprise, etc. Display one of the pictures showing an emotion and ask questions such as the following:

How do you think this person might be feeling?
What makes you think he feels this way?
How many things can you think of that could cause a person to feel like this?
What might be happening to this person right now?

Display another picture and ask:

How do you feel when you are.....?
(Whatever picture you choose).
Do you have different inside feelings than you show outside?
How do you act when you are feeling this way?
Instead of pictures, let students role play and have the class guess what feelings they are trying to portray.

Activity: This activity can be written on the board for the students to copy and fill in according to their ability. It could also be done verbally with the whole class participating. The lower grades are more successful doing this activity verbally.

I feel kind of happy when
.....
I feel happy when
.....
I really fell happy when
.....
I am happiest of all when
.....
Follow with a written activity, such as: My Happiest Time.

Activity: This activity is suggested to be written in the form of a theme. Direct the following questions to the students and ask for a written response:

What do you think of yourself?
How do you expect (or like) other people to treat you?
Do you treat yourself as you'd like others to treat you?
Do you treat others as you treat yourself?

Activity: This activity can be done orally or in written form. Show several colors to the class. Choose one color at a time. Ask questions such as: How does this color make you feel? How do you feel when you wear this color?

The color of happiness is Why?
The color of anger is Why?
The color of sadness is Why?

Ask the students to choose their favorite color. Have them write about it and tell how it makes them feel. Ask students the following questions: What if the world were black? What two colors would you use to make the world more interesting? Why did you choose those two particular colors?

Activity: Cut out pictures of people showing emotions. Number the pictures. Pass paper to students and have them write numbers vertically on the papers to correspond with the pictures. Pass the pictures to the students and tell them to match the number of the picture to the number of their paper and write down their idea about what that person might be thinking and what would he say next.

Activity: Have students cut pictures out of magazines of people showing emotions. Have them categorize the pictures into four categories, i.e., angry, sad, happy, surprised.

Activity: Have students draw a face showing an emotion. Then instruct them to let another student think of a one word description of their picture. Compare with what the originator had in mind.

Activity: Display two famous paintings from a library. Ask the students which one they would like to have in their own home and why?

Activity: Show the students a picture such as Charles Russell's "End of the Trail". Have

the students ask questions about the picture and then ask them what they think might have happened. Ask them how they feel about the picture or what the picture does to them.

Activity: This activity might be helpful to use with a group of students who are having peer group difficulties. After oral discussion, have the students fill out this form or a similar form and then discuss. In the lower grades, the written activity is usually more successful when limited to one or two ideas at a time.

WHAT AND HOW IS ANGRY?

When I am angry, I feel this way inside

When I am angry, I feel like doing

When I am angry, I feel this way toward other people

Some of the things that others do that make me angry are

Some of the things I do that makes me feel angry are

Some of the things I can do when I feel angry are

Here are some things I can do to avoid feeling angry

Also use some questions similar to the above using the word happy.

Activity: Have the students draw a picture of:

The way their stomach feels when they are scared.

The way you feel inside when you are angry and you want to yell and scream and hit and you can't.

When someone breaks your favorite toy.

When you feel like everything in the world is good.

Activity: After talking about emotion, pictures, drawings, etc., have a child act out an emotion.

Ask what he would do when he felt this way and have class guess which emotion is being portrayed.

Activity: Show an old shoe or an old piece of clothing. Ask: Where do you think this shoe came from? Who owned it? What was the owner like? How did the shoe get this way?

Curriculum Related Activities:

Language Arts—When reading stories, discuss how the characters might feel when certain things happen to them.

Have students write a story pretending each is a student's story that was thrown in the garbage can.

Math—Give students problems to solve. Before any have time to finish, collect the papers. Ask the students to evaluate their feelings.

Science—Give students a step by step experiment to do — leaving out an important step. After they try unsuccessfully a few times, say, "Oh, I forgot a step". Let the students talk about their feelings.

Social Studies—Stage an argument between two students. Have the class hear both sides of the argument and take turns evaluating which student seemed to be in the right.

Art—Have the students draw a picture of angry, sad, happy, or of their future.

Music—As a class, sing a song using happy voices, sad voices, angry voices. Talk about which way would be more pleasing to others. Play records and see if the class can hear sad music, happy music, angry music, etc.

Physical Education—When someone wins a race let him tell how he feels. Also, when someone loses let him express how he feels.

Evaluation: Have students write or tell about a time when they got their feelings hurt. See if they can evaluate their own actions and actions of others to know what caused their feelings to be hurt.

Have the students write or tell of a time that they hurt someone else's feelings. Have them give reasons for their behavior.

WHAT WOULD YOU DO?

Thinking Development Objective: To help students logically evaluate situations in which they must perceive, identify problems, and make practical judgments.

Teacher Note: To stimulate creative thinking it is necessary that you give equal attention and acceptance to all ideas. You might open the discussion of the problems that might arise to the whole class and list possible solutions, or you might solve the problems in committees. The original sharing or brainstorming will stimulate excitement and in turn will increase involvements in the solution of problems. Using committees to solve problems can increase individual participation.

Activity: On a snowy day give the students the following situation: It has been snowing all day and we are snowbound at school. What are the problems that might arise? How many ways can you think of to solve the problems?

Activity: Give the students a situation such as the following: Suppose you went home from school and your home wasn't there. It had disappeared and all other houses were gone. What would you do?

Activity: Ask the students what they would do if a strange person offered them a ride home from school.

Activity: Tell the students that tomorrow there will be ten new members added to the class. Discuss what this will mean to them. What changes will there be in the classroom?

Activity: Give the class the following situation to evaluate: Someone offers to give you a Saint Bernard puppy. What objections would your parents have? What would you say to change your parents' mind?

Activity: Ask the students what they would do if they just discovered that they were locked in school and couldn't get out.

Activity: Ask students what they would do if there was an earthquake while they were in class. What would their feelings be?

Activity: Give the students the following possibility: The water supply is suddenly completely

cut off. What are all the things that would be affected? How would you solve the problems that arise? Or the problem might be that everytime you turn on the tap the water comes out sudsy and stays that way.

Activity: Have the students discuss the following possibility: The wind has stopped blowing where you live. It will never blow again. What will this mean? What new problems would occur? How would you solve the problems that arise?

Activity: Ask the students to tell what they think the world would be like if there were no cars or airplanes.

Activity: Have a science fiction day. Tell the students that the sun is going to burn out. What would they do in order to survive?

Activity: Discuss as a class the following situation: The main industry in your town is closed down. How will that affect your town? How can you solve the unemployment problem?

Activity: Have another science-fiction day and present the following situation: Due to circumstances beyond our control, gravity has been cut in half. How will your life be affected? What can you do to minimize the affects? What would a baseball game be like? How would you change the equipment, the location of the bases, etc., in order to have a game which approximates a game under normal gravity?

Activity: Discuss as a class how to solve a classroom problem.

1. Getting along at recess
2. Not pushing in line
3. Boys letting the girls play
4. Keeping restrooms clean
5. Getting ready to go outside or going home in an orderly fashion

Activity: Discuss what you would do if you went to buy groceries at the checkstand and didn't have any money.

Activity: Give the class the following situation: You are babysitting. The baby gets hurt, sick, etc. What is most important? What would be your emergency action?

Curriculum Related Activities:

Language Arts—Begin telling or reading a story or a poem and have the students finish it. Compare the students' endings with the one in the book. Have them choose which one they liked best and why.

Math—Give the students the task of measuring the school ground or parts of the playground. They may not use measuring tapes or yardstick rulers. Let students find ways it could be measured to give the most accurate measurement.

Science—Any discovery method experiment helps a child with this thinking skill.

Social Studies—Have the students pretend they are living in a different era. What can they do to change history for the better?

Art—Give the students drawing paper and pencil and ask them to draw a scene trying

to show late afternoon or middle of the night.

Music—Have the students pretend they are giving a very important performance and they have forgotten their music. Their parents are already in the audience. What can they do so they will not spoil the program?

Physical Education—Have the students evaluate the following situation: If one member of a team seems to have trouble playing the game and loses points for the team, what could the rest of the team do to help the situation without hurting the teammate's feelings?

situation: On a fieldtrip, one member of the class became separated from the group for a time and came back to find the bus gone, what are the first three things he should do to get help?

THINKING

Thinking Development Objective: To help the student develop his evaluative thinking in terms of the thought process.

Teacher Note: This exercise will involve a number of questions directed at the students. These questions may be written or oral. Other responses may be used at your discretion. These activities will possibly take several days.

Activity: Ask the students. What happens when you touch a stove?

What was your first thought when you woke up this morning?

What do you like to think about?

Draw a picture that describes the word THINK.

Bring an example(s) that describe the word THINK to you.

How do you know when your mother or dad is thinking.

How does your Mom or Dad look or act when they are thinking?

What do you see in the word THINK?

What do you think about when you are alone?
What kind of thinking makes you feel good?

What did you think about on your way to school today?

How many kinds of thinking can you name or list?

How can you tell when your teacher is thinking?

Activity: Describe what happens when you think.

When do you do your best thinking?

Where do you do your best thinking?

What kind of a classroom makes you think the very best?

What parts of your body do you use when you are at bat ready to hit the ball. What are your thoughts and how do you feel inside?

Activity: Discuss as a whole class or in small groups:

When would you keep thoughts or ideas to yourself?

When or how could someone stop you from thinking?

How could you sell an original idea or thought?

You are a thief. How would you go about stealing ideas from another person?

What special powers or secrets does the word THINK have for you?

Are imagination and thinking alike? If not, when are they different?

What original idea do you have (an invention, a building, a project, etc.) that no one else seems to have had?

What solution can you offer to a social problem such as drugs, pollution, wars, overpopulation?

Curriculum Related Activities:

Language Arts—Give all the students the same word and let each describe what he sees or what is pictured in his mind when he hears the word. Use a variety of words.

Math—Give all the students the same story problem. See how many ways they arrive at the answer.

Science—Set up a science experiment. Let each student tell or write what he thinks

the outcome of the experiment will be, or what it will show.

Social Studies—Have each student decide how and when he would like to cross a desert.

Let each student make a list of the problems he feels needs to be solved. What or who caused these problems and what or who will solve them?

Art—Ask the students to give their ideas about what they think the Mona Lisa is thinking.

Music—Play selected recordings and have students tell or write about what they think about while listening to the record.

Physical Education—Let each student list the games that he likes to play or watch. Tell why these were his choices.

Evaluation: Let the students write or describe all the good things they saw happen at school today.

DISCRIMINATION

Thinking Development Objective: To help the student develop his evaluative thinking skills through activities designed to sharpen visual discrimination.

Teacher Note: You have probably seen this type of exercise as a reading readiness test or as a section of a college entrance examination. The student is asked to make a judgement on the basis of comparison and to decide which object is different, which object does not belong, or which object will best complete the picture.

Activity: Draw four or five items on the board. Ask the students to identify the one that is not like the others. Let all students make an example of their own as soon as they have the idea. Share them.

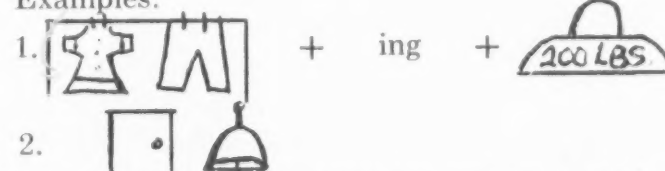
Activity: Use several objects. Make two of them alike. The first set of objects may have "twins" that are easy to identify. The second set of objects may have the "twins" in different positions — two objects may be just alike but one may be upside down while the other is right side up. Let all students make an ex-

ample of their own as soon as they have the idea. Let each student share his example.

Activity: Draw an object with a missing part. Draw several items one of which is the missing part. The object you draw may be a geometric shape or a real thing such as a wagon without a wheel and the missing part is the wheel; a child in a rainstorm and the missing part is the umbrella — make them as difficult as your group can handle. Let all students make an example of their own as soon as they have the idea. Let each student share his example.

Activity: Use numbers, pictures and/or symbols to make up a word.

Examples:



Activity: Run a phrase together and let the class decide what it says; where the words should be separated.

willeveryonesitdown
whatisyourname
somebodyiscalling

Activity: Use numbers, pictures, or symbols to demonstrate an "impossible word" such as:

Have you ever seen a "peanut stand?"
Have you ever seen a mountain slide?
Have you ever seen a horse fly?

Curriculum Related Activities:

Language Arts—Give students spelling tests where they are asked to identify correctly spelled words from a group of misspelled words. Example: simpel
simple
simpal

Math—Give students a page of number combinations. Ask them to find the combinations that make 14.

3 + 11	24 - 10	17 - 3
2 + 2 + 2 + 2 + 2 + 2 + 2	7 X 2	
6 + 5	11 - 3	10 + 4
IV + X	100 - 86	10 + 6
		2 + 12

Science—Bring a collection of rocks to school. Have students put the ones that seem to be alike together. Study them to see if they have been grouped correctly.

Social Studies—Show five or six pictures of children. One picture showing children from America, the other pictures showing children from other countries. Have the students try to pick out the American children.

Art—Study the many pictures of Abraham Lincoln. Pick out the one that was put on the penny.

After studying the works of famous artists show a variety of paintings and have the students identify the artists by the style of the painting.

Music—Have students compare two measures of music. Discuss likenesses and differences.

Physical Education—Have a demonstration of good running form, or good tumbling, then have students evaluate their own running and tumbling.

Watch Olympic games — have students judge the best participants and see if the ones they choose to be winners are the same as the ones the judges chose.

Evaluation: Have each student construct a discriminatory test for the rest of the class to take using geometric figures. See how many can stump the class.

WHAT IF?

Thinking Development Objective: To help students evaluate possibilities and alternatives when placed in a specific situation.

Teacher Note: The following activities are designed to help students build an attitude of self-assurance. By giving him opportunities to place themselves in "what if" situations they become more able to adjust to unexpected or unfamiliar situations in their own lives.

Activity: The following are discussion questions that are excellent for developing evaluation skills.

What is nice about home?
What is nice about your Mother? Your Father?
What is nice about having a friend?

What kind of people do you like for friends?
What do you like about school?
What is nice about our school?
What do you like about your pet?
What is your favorite color? Why? How does it make you feel? How does the color make you feel? Why?
Why do people enjoy books, TV, films, poetry, painting?
What do you think life would be like if people couldn't talk? Why are words important?
Why are there different countries?
Why do people build so many different kinds of houses?
Why do people look different; act different; enjoy different things?
Why are some people optimistic? Pessimists?
If you were a pessimist, how might you help yourself to look on the bright side of life?

Activity: Pretend you have a visitor from space. Have students think of questions they would like to ask the visitor. List all the student ideas on the board. Divide the class into committees and have each committee select the best three questions to ask the space visitors. Put the committee's results on the board. Then have the whole group choose the three best questions. Ask the students to defend the questions they have chosen, tell why they are the three best questions.

Variation: Tell the students that a planetary visitor has landed on the playground. What would they like to ask him about his planet? The visitor said he will answer only three questions. What three questions can we ask? Remember, our aim is to get as much information as possible.

Variation: Tell the class that a planetary visitor landed on the playground. Ask what do they think he would want to know about our planet. What would they consider to be the five most important things they should tell him so that his visit would be pleasant? Ask the students what they think he might find strange about life here and how might they explain these strange things to him?

Activity: Have the students pretend they are in the following situation:

You are a pilgrim. You have just arrived in the New World. It is cold and you are without shelter and food. What would you do? What would be the first priority, second, etc? It is a year later. For what do you have to be thankful?

Curriculum Related Activities:

Language Arts—Ask students to think of all the books they've read. Then ask them to decide which one they would like to share with the class and why.

Select a variety of poems. Read to the class and have each student tell which one he liked best and why.

Math—Have the students evaluate the necessity of using the same units of measure, units of exchange, means of telling time, weight, etc.

Science—Have the class, as a group or individually, evaluate a unit or experiment.

Social Studies—Have students explore the following possibilities:

What if Columbus had not discovered America.

What if the British had won the Revolutionary War.

Then have the students evaluate our country as it is today.

Art—Ask students the following question:

If there was only one method of art to express ourselves, what would it be, and what would the world be like?

Music—Have the students evaluate what our music would be like today if the musical instruments we have now had not been invented.

Physical Education—Evaluate, as a class, what would happen if students didn't have training in Physical Education or opportunities to participate in sports activities.

Evaluation: Present the following situation to the students:

What if the power supply in our city were shut off for 24 hours? What ways would we:

- keep warm
- fix meals
- maintain computers
- keep in communication with other cities
- keep hospitals operating
- help others

YOU ARE THERE

Thinking Development Objective: Student's ability to generate information based upon a given set of information is developed as students are asked to project themselves into another time or place and to produce logical ideas concerning these new situations.

Teacher Note: You can generate enthusiasm and encourage student involvement by starting out the activity with a classroom discussion. Then turn to committees or pairs to think through or solve the assignment. In the lower grades, the activities can be oral.

Activity: Ask students to discuss the following:
What does your mother or father do for you?
How many ways could you show you were thankful?

You are one of the Pilgrims on that first Thanksgiving Day. For what are you thankful? What did you eat at the feast? Why did you invite the Indians to share the meal?

You are an Indian eating with the Pilgrims. What did you think of the white men when they first landed on your shores? How did you feel? What do you think about white men now?

Activity: Class discussion suggestion:

What if we decided to make rocks today. What would we use? What might keep us from being able to do it?

Activity: Class discussion suggestions:

What are some of the problems mothers have in the kitchen? How would you solve these problems to make work easier?

What are some of the problems fathers have around the house or in the yard? How would you solve the problems to make work easier?

What are some of the problems in the classroom? How might we solve the problems?

Activity: Direct the students to consider the five senses and how they affect perception and performance. Then ask the students the following:

Of all your five senses — seeing, hearing, tasting, smelling, and feeling — which do you value the most? Give as many reasons as you can for your choice. If you had to lose one sense, which one would you choose? Give rea-

sons for your choice. In terms of your choice, in what ways would you be limited? How would your limitations affect your activities now? How would your limitations affect your job selection? What compensations or adjustments might you have to make for the loss of one sense?

Activity: This type of activity can consider any explorer in history e.g., Columbus.

Have the students pretend to be in the following situation: You are with Columbus and you just landed in the new world. What did you find? What did you take back to show and what did you tell Ferdinand and Isabella? How did what you found influence future exploration?

Activity: Have students consider the following:

How do you think life in the United States will be different by the year 2000?

Write a description of a trip on a plane, train, bus, ocean liner, covered wagon, sailing ship.

List all the things that would describe your life as a pioneer, Roman slave, knight in King Arthur's Court, American colonist, explorer, etc.

Tell everything that might happen in one day if you were a pioneer, Roman slave, knight in King Arthur's Court, American colonist, explorer, etc. What would your life be like? What might your problems be? How might you solve them? What might you talk about?

Activity: Direct students to put themselves in the following situations and to describe conditions and problems.

You have been chosen as an astronaut. What will your life be like aboard the spaceship?

The year is 2050 and you are an astronaut. What will your spaceship be like? Where might your destination be?

You are a Venusian scientist. What kind of spaceship would you invent? Where would your destination be? Why?

You are a tree. Which one would you be? Why? Where would you be growing? Why? What would you be thinking?

You are a toothbrush. What have your experiences been? Why do you like being a toothbrush?

You have \$..... (amount of money). Which stocks would you buy with it? Why?

You have just moved to a new area and are lonesome. How would you go about making friends?

Curriculum Related Activities:

Language Arts—Have students write poems, stories, letters, news stories, representing a situation in another time.

Prepare news broadcasts as if you were there.

Have debates from the point of view of a person in another time.

Prepare a speech as if they were a person from history.

Math—Study computation systems and monetary systems of other ages.

Read about the history of measurement. Convert to another system of measurement.

Science—Have students investigate scientists of the past and pretend they are working with one of those scientists. Have them tell about existing conditions. Consider Galileo, Newton, Pasteur, Archimedes, Da Vinci, etc.

Have the class project themselves into the future (any year in the future). What new discoveries are there?

Ask members of the class to suppose they were there when (the wheel, the lever, etc.) was discovered. How did the discovery take place?

Social Studies—Have the students be a person in history and find out all they can about the time and the setting.

Art—Have the students:

Draw illustrations of clothing, occupations, recreation of times past and present.

Draw armaments of the past.

Draw illustrations of buildings past and future.

Make diagrams of another period of time.

Reproduce art of people past or future.

Draw clothes of the future.

Make miniatures of houses, cities, parks of of the past or future.

Music—As a class, discuss musical style as it relates to cultural growth. How does musical style relate to cultural location in the world?

Physical Education—Have the students devise games using materials of the time past, present, or future.

Evaluation: Play the game of "You Were There" with the students. Tell them:

You find yourself back in time. You are living with early man in a hunting, cave dwelling society. What problems will you have? What skills will you need to learn? What changes will you make in the way you live?

MAP EVALUATION

Thinking Development Objective: To develop the student's evaluative thinking in terms of symbolic identification and judgment.

Teacher Note: The ability to read and interpret a map is an important cognitive skill. This exercise is basically a student discovery method which will greatly increase many map reading

skills. The proof of learning is the student's ability to evaluate the unfamiliar after sharing group evaluative experiences.

The basic teaching approach is to show a picture or a map to the class and ask them to tell you what they see, what information is there, how they interpret the information.

Lower grades could best work with a picture of a neighborhood, a shopping center, or a simplified plan of the school building. Upper grades can work well with their community or city area, their state, their nation, or the world. You may substitute a plan of your classroom, a plan of a home, a plan of your school, your neighborhood, your community, a large city, a state, a country, or of the world. Adapt to your grade level.

Activity: Evaluate a real, but unfamiliar map. Work as a class. Ask students to identify anything that they can from looking at the map. When a student identifies a city, ask how they knew it was a city; why do they think the city was located where it is; how big is the city. Let the class handle and discuss the problem, don't try to lead them to what you as a teacher consider to be the correct assumption — let the class research — find out what the correct answer is. The teacher's role is to keep the discussion going and to be sure that all evaluations are shared and discussed.

Activity: Ask open ended questions. Example: Where would be the best place for a crosswalk? Why? How can you tell which way the rivers are flowing? Why? Where are the cities? Why? Is there anything you would like to change? Why? Why do you think the freeways were built where they were on this map. Could you think of a better way to arrange the road system? Explain.

Activity: Ask students to list the questions they think are important when looking at an unfamiliar map. What things should a map show? What information should you be able to find? What should a map key tell you?

Use the students' questions as an evaluation guide. Reproduce the student's questions to be used by the class as they evaluate an unfamiliar map.

Curriculum Related Application:

Language Arts—Have students write a story about a pirate treasure map that has been found. Include why the treasure was buried where it was.

Math—Have the students look at a map of an unfamiliar state or country. Have them figure the shortest route between two cities.

Science—Ask the students to pretend they are scientists. Using a map of the U.S., let them select the best place to locate a new scientific laboratory for space exploration.

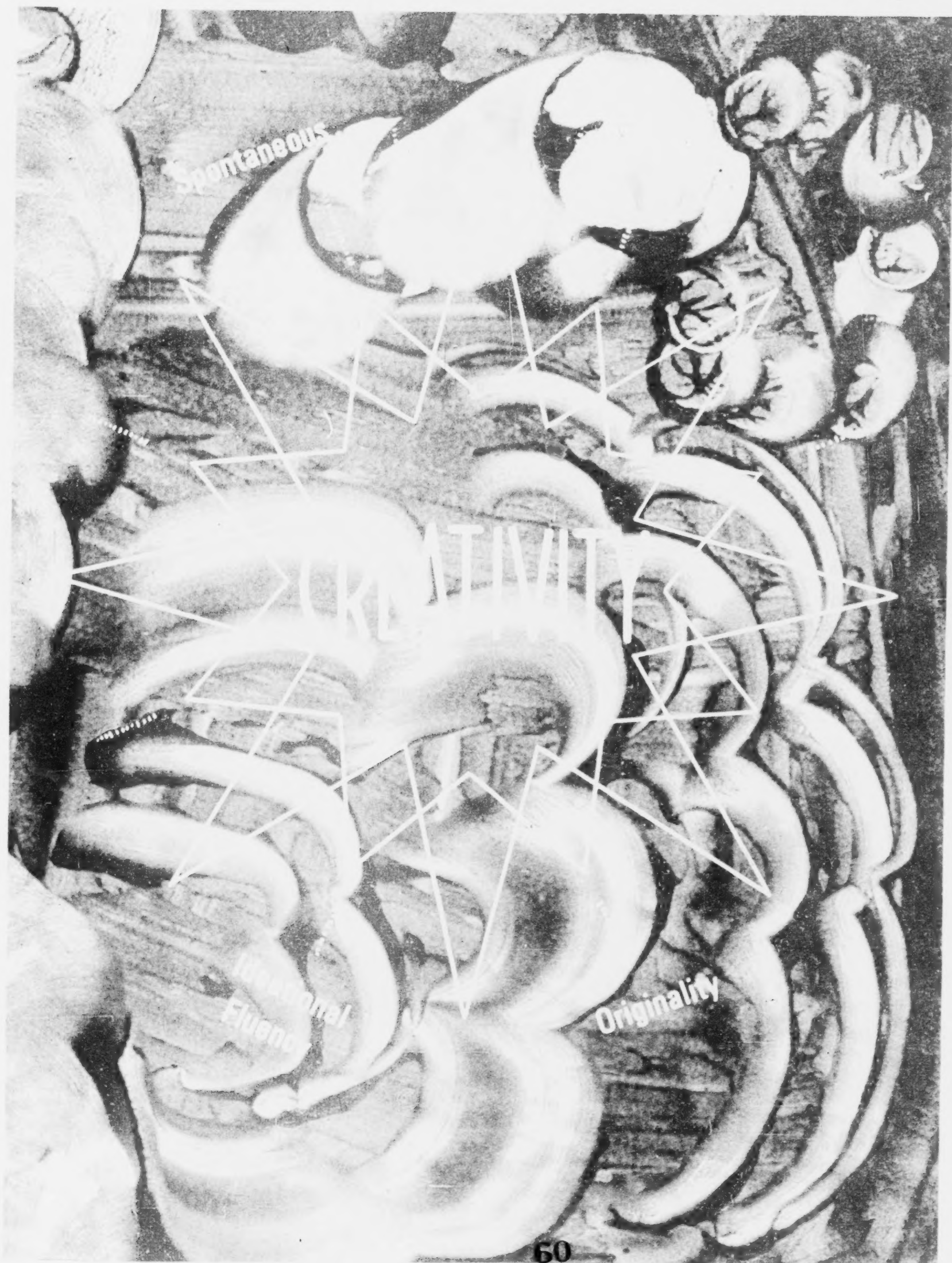
Social Studies—Discuss how and why a map of the U.S. has changed over the last two hundred years.

Art—Have students make maps of their own and then have students evaluate each other's maps, according to grade level and criteria set by teacher or student.

Music—Have students evaluate the symbols used in music. Play a simple melody on piano. Then play the same melody giving all the notes the same value. Compare with the first melody.

Physical Education—Draw a layout of the gymnasium or playground. Have students evaluate equipment already there and suggest things they think would improve it.

Evaluation: Hide something in the room or on the school grounds. Draw a map explaining where to find your hidden object.



"It is now a known fact that nearly all of us can become more creative, if we will. And this very fact may well be the hope of the world. By becoming more creative we can lead brighter lives, and can live better with each other. By becoming more creative we can provide better goods and services to each other, to the result of a higher and higher standard of living. By becoming more creative we may even find a way to bring permanent peace to all the world."

—Alex F. Osborn

"My discovery is that pure individuality never dies, that it may still be reached at any age and be trained to assert its birthright of freedom; my further belief is that this education of the creative self is the open door to a wise and peaceful way of life and that if widely employed, it might even be the hope of a tortured world."

—Hughes Mearns

"Creativeness cannot be taught; it can only be released and guided. This, in essence, is the job of the teacher to release inner power into productive outer channels."

—Mauree Applegate

"Education for creativity is nothing short of education for living."

—Erich Fromm

"Creativity is the encounter of the intensely conscious human being with his world."

—Rollo May

"Self-actualizing creativeness is emitted, like radioactivity, and hits all of life, regardless of problems, just as a cheerful person emits cheerfulness without purpose or design or even consciousness. It is emitted like sunshine; it spreads all over the place; it makes some things grow (which are growable) and is wasted on rocks and other ungrowable things."

—Abraham H. Maslow

"It appears that some people have experiences that develop their facility in intellectual processes associated with creativity and intelligence. Research seems to demonstrate that we can design educational programs for many of these experiences, rather than merely waiting and hoping for them to happen."

—Sidney J. Parnes

"POPPING POPCORN"

By Lisa

First Grade

GUIDELINES FOR CREATIVE TALENT

Creative Talent: The ability to go beyond; putting together seemingly unrelated information to come up with new solutions, new ways of expressing ideas; creative production.

Fluency: The internal process of idea production is used to encourage as many ideas as possible. Sharing of ideas increases fluency and confidence.

Flexibility: From how many points of view is the individual able to consider the problem? Spontaneous flexibility can often be measured by placing responses in categories.

Originality: Consider the problem from unusual points of view. Relate the heretofore unconnected to solve the problem in a new or unusual way.

The process of creative production is best developed through steps which stimulate fluency, encourage flexibility, and inspire originality. The talent teaching process itself often follows a basic teaching pattern:

1. Presentation of item or problem for consideration
2. Time to think, list, enumerate
3. Share ideas and thoughts, revise, refine — accept *all* responses
4. Incubation period

5. Share additional ideas
6. Select your best solution
7. Select your most original solution
8. Act in terms of solution, decision

It is often necessary to get students started. The enclosed activities encourage ideational fluency (the generation of ideas) while not specifically looking for a solution. Before students can be creative problem solvers, they must first learn creative expression, have flexible consideration, and seek original responses.

Fluency: Ask students for:

- As many ideas as possible
- To share ideas and expand the list
- To add more to the list and to think of some other possibilities
- After discussion, increase lists again

Flexibility: Ask students to:

- List as many uses as possible for a specific use or category
- Repeat the process for a new use or category

Originality: Ask for judgments as to:

- Most unusual answer
- Most unexpected answer
- The answer no one else thought of
- After sharing, think of another answer no one else has considered.

DISCUSS, DISCOVER, AND DESIGN

Talent Development Objective: To help the student's ideational fluency and flexibility by generating new uses and possibilities.

Teacher Note: These activities may be used to increase fluency, flexibility and originality. They are also effective as "warm-up" exercises to use before more involved lessons requiring creative thinking.

Activity: Phase I. Show the students an umbrella or a picture of an umbrella. Some directed statements that might be made are: You all know what an umbrella is. Now stretch your

imagination and think of as many uses as you can for an umbrella. Let it help you to do anything.

Impose a time limit (suggested 5 minutes) for students to list possibilities. Lower grades might work in small groups to which an older student has been assigned as secretary. Have the students or groups of students share ideas orally and make a master list on the board or on a chart. Ask students if the sharing has given them some new ideas. Can they now increase their list by adding something to it that no one else has come up with?

Phase II. This phase involves training for transfer of the thinking skill and is geared to creative, flexible production. Pick any other object; ballpoint pen, a chair, a bottle, book, etc. Ask students to list or generate as many uses as possible for this object. Compare their production. Were they more productive in the second exercise than in the first?

Activity: Show students a box or package. Ask students to think of all the things that might be in the package. When they are making up their minds, you might list all of the things that they might consider such as size, smell, weight, and the noise it makes when handled. Have students pass the box around so that all can handle it. Ask students to make a list enumerating all of the things the package might contain. Now list all of the things you would like it to contain. Now direct each student to select the one item that he thinks is the most likely item (or items) to be inside the package. Ask each student to defend his choice; why does he think he is correct. You may or may not have a student open the package to verify findings.

Activity: Phase I. Display an unfamiliar object. Direct the students to make a list of all the possible uses that they can think of. Share the ideas with the group . . . this will generate new ideas so that the students can add to their lists. Now from your list, pick the usage that you think was, in fact, the intent of the inventor. Ask students to explain the reasons for their particular selection as to use.

Phase II. Look at the object with your students again. Ask them to consider altering the object. If it were altered, what might it look like and what might it then be used for?

You might discuss with the students problems such as: (1) How would you manufacture this article if you had to make several thousand of them? (2) How would you sell your article? (3) What one good idea would you use to advertise this article or product?

Activity: By considering the group needs, designs for group activities can be invented or created a game is a good example of a group effort. Move the students from the familiar to the unfamiliar through discussion and discov-

ery. You might begin by discussing and listing all kinds of equipment people use when playing games; i.e., balls, bats, nets, pegs, sticks, ropes. You might then discuss the structure and designed functions of familiar games; i.e., rules, how to win, the development of skills, the goal of the game.

After the above discussion, ask the students to design a new game. Tell them to decide upon the period of time in which the game will be played, decide where the game will be played, who will play the game, what the rules of the game will be, and how one will win the game.

Designing a game may be done by individuals or by a group of students. Direct them to write the instructions down, in the case of older students. Ask them to explain the new game to another group of students and see if the group being instructed can play the game.

Activity: Have the students, bring various objects from commercial games that might be found in their homes. Use these objects to invent a new game. Discuss the rules and the use of equipment.

Activity: Ask students to collect "odds and ends" that they think could be used to produce a game. Design a game and a method of play using these objects. Objects might include buttons, twine, nails, paper, pencil, etc.

Activity: Design a new game which incorporates the rules of a game that the students now play with a new rule. The new rule might impose a physical limitation such as using only one arm, running backwards, hopping, etc. The new rule might impose a new problem on an old game such as playing baseball with three teams, playing football on your knees and using a smaller field of play.

Activity: Ask the students to design a game to meet a special criteria or situation.

Design a game using a familiar object or an unfamiliar object.

Design a game using no sound.

Give the student a list of materials. Have students design a game using only these materials.

Design a game for subject matter development: spelling, arithmetic, reading, phonics, etc.

Design a new game using a jump rope.

Design a baseball game for a swimming pool.

Design a game for blind children or for people who have been blind-folded.

Design a new game to play in the snow.

Design a game for your family to play in the car while on vacation.

Design a game for kindergarten children to play.

Curriculum Related Activities:

Language Arts—Use discussions and the discovery of relationships to help increase vocabulary and reading skills.

Write and read instructions that describe a game.

Design a game for a T.V. series. Design a set and produce the games for use in the classroom.

Evaluate written instruction, rewrite them so that they are more easily understood.

Math—Discuss and list all possible uses for a ruler, calendar, compass, clock, etc.

Discuss and list all possible uses for an arithmetic process (addition, subtraction, multiplication, division).

Design a new calendar, a new object for measuring linear distance.

Design an arithmetic skill development game.

Science—Discuss the many possible uses for a scientific fact or given body of information. A sample question might be — What are all the reasons for having reliable weather forecasts? What would happen if all weather forecasts were usually incorrect?

Design a game that will teach a scientific principle. Such a game would be designed

so that an experiment will teach an application.

Design a game that will help to relate famous scientific discoveries with the scientists that made the discovery.

Social Studies—Discuss the effects of a new technological development upon a given society or culture. What would the same development have had on another culture in another time?

Discuss the problems of foreign aid. Why does the need of the culture and the cultural development need to be considered when sending tools or equipment?

Design a game for Indian children; for children of the middle ages; for children to play on the Mayflower; for a group of adults and their teenagers, etc.

Music—Discuss all the possible uses for music as we see it used now and as it might be used in the future.

Design a game that will teach differences in rhythm, mood or any other musical fact.

Design a dance.

Art—Design a mural that will show many different uses of something.

Design a mural that will demonstrate a game or that will illustrate a set of instructions.

Physical Education—List all possible uses for a given kind of equipment or a given play area.

Design a game to develop a specific fitness skill.

Evaluation: Show the students a toy or a piece of physical education equipment which has an understood function. Have the students list all the other functions or uses this piece of equipment or toy could have.

CREATE A PICTURE

Talent Development Objective: To help the student develop originality by creating designs and objects, flexibility by creating variety.

Teacher Note: Do not specify an expected final production. Give the same materials to each child and the same instructions. Use circles, squares, triangles or any combination of geometric shapes. To encourage originality and fluency ask students to strive for something that is different from the product that might be produced by another student.

Activity: Tell students here is a (name of the shape you have selected). Use this shape to make an unusual picture or design. The shape will be part of your picture. You may add any lines or colors you need to finish your picture. Use this shape to make something.

Activity: Have students create a picture using only two colors.

Activity: Have students create a picture using only punctuation marks.

Activity: Have students create a picture using only letters or numbers.

Activity: Have students create a picture from a page of shapes, lines, or combination of shapes and lines that the teacher has drawn on the board or on a chart.

Activity: Have students make a picture using straight lines only.

Activity: Precut odd shapes and give each child one of the shapes. Make this shape into a thing or a part of a thing. Glue it on your paper and add detail with paint or crayon.

The above examples would be cut by the teacher, color and shape to be determined by the teacher. Make them a size that will be easy for the children to use. Be sure you do not give clues as to what you consider the shape to suggest or in which direction it should be placed.

Activity: Create a picture using only: complementary colors; monochromatic colors; split com-

plementary colors, triad colors; double split complementary colors; analogous complementary; or analogous colors.

Activity: On a piece of art paper, have the children draw four or five lines, (curved and straight), from edge to edge, make a scribble design.

Ask them to use their imagination and find some object or animal or person in the design. Put in the necessary features and color it. Using color contrast, fill in the other areas.

Activity: Create a collage out of what you can find out-of-doors in a fifteen minute search.

Activity: Have students try to think of something that has never been used to make a picture. Make a picture out of some unusual material (metal, cloth, plant samples, etc.)

Activity: Challenge your students to create a new art form.

Curriculum Related Activities:

Language Arts—Have students create picture words or posters. Use the letters of the word to draw a picture of the meaning of the word.

Instruct the students how to give personality or life to a geometric shape. Have them write a story about a triangle, a circle, a square, etc. Illustrate the story using the geometric shape.

Math—Have students create a picture using a shape or symbol being studied.

Science—Shapes relate to the strength of buildings and to the amount of work that can be done. As a class, examine the designs in buildings that offer the greatest strength and utility.

Study the shapes involved in the description of simple machines and the work that they do.

Have students design a strong building.

Ask students to draw a picture illustrating a simple machine using the basic shapes

to tell how the simple machine works and why it works.

Have the students create a picture from objects used in a science experiment, project, or unit of study.

Social Studies—Study shape in architecture—in houses, schools, public buildings, buildings in other countries, church architecture, or shapes in nature.

Begin with the basic shape of your study. Have the student make a picture of a building using the basic shape under discussion.

Analyze the use of shape in architecture as it reflects cultural art and needs.

Have the students create a poster that communicates "Liberty for All".

Music—Have students listen to musical selections. Of what shapes do the musical selections remind you? Why? Illustrate the selection on the basis of each student's interpretation.

Art—Using shapes or unusual materials ask students to construct a picture, a sculpture, a diorama or other displays.

Have each student make a picture to enter in an art festival.

Physical Education—Have students draw different P.E. activities.

Evaluation: Give, or have the students find their own pictures from nature. Have them find all the geometric shapes nature uses in shaping the world.

POSSIBILITIES

Talent Development Objective: To help the students to develop fluency and flexibility through activities which call for multiple solutions or possibilities.

Teacher Note: The main goal is to develop the creative thinking skills of students. The greater the number of ideas generated by one student, the more fluent he is; the greater the number of categories included, the more flexible; and the more unique the ideas, the greater the degree of originality. Have students develop their own lists. After sharing, give students a chance to add to their lists as sharing will stimulate the production of new ideas.

It is important for the teacher to accept all ideas given. This activity may be done orally, in a small group, or it may be a written activity.

Activity: Here are some statements. Have the students list all of the situations that could have caused a given solution to become necessary.

What happened before:

You called the police.
The stars didn't shine.

The mailman limped.

All the policemen are walking.

The answer is 12.

You helped your friend.

Everyone wore the same thing to school.

Litter was all over the school grounds.

The service station is giving away free drinks.

Your dad's car is still home.

There is water all over the floor.

Newspaper headline: STOCK MARKET FALLS.

Your parents are coming to school.

TV emergency bulletin: EVACUATE HOMES IMMEDIATELY.

Your teacher came in late.

The electricity is off.

The school bus is late.

The siren was screeching.

Your friend is crying.

They paid for the window.

Your shoes hurt.

You are very angry.

Activity: The book, *Fortunately*, by Remy Charlip, is a good motivation for the students. Let them invent their own fortunately, unfortunately stories:

Begin with a statement: Fortunately
....., follow with an unfortunately
..... statement.

Example: Fortunately, there was a big box
delivered to me at the front door.

Unfortunately, the door was stuck.

Fortunately, I had a back door.

Unfortunately, the path to the back door
was blocked by a big lion.

Fortunately, the lion was old, tired, and
full.

Unfortunately the delivery boy didn't know
it.

Continue or invent an ending when it seems
the story can be terminated.

Activity: Show the class a picture of animals or
of people. Ask them to think of all the pos-
sible questions that could be asked about the
picture, and then list the questions on the
board.

Activity: Have a discussion concerning a current
event. After the students have discussed the
many facets involved, have them think of all
the possible solutions to the problem.

Curriculum Related Activities:

Language Arts—Have students make a list of
all the descriptive words they can think
of for a noun such as a horse, a tree, a
cloud, a shoe.

After reading a poem or descriptive para-
graph, have the students list all the possible
titles for the poem or the paragraph.

Have the students make a list of resources
that will help them in a certain report or
course of study.

Math—Ask students to write or express 100
in as many ways as possible.

Have the students list all the ways they
could proceed to solve a story problem, or
to solve a described financial problem.

How many ways can you measure one
gallon?

How many ways can you describe five
hours?

Science—Ask students to list all the outcomes,
effects, or changes that might be expected
as a result of an experiment. Have students
list all the possible solutions for the dis-
posal of wrecked cars, garbage or used
paper.

Ask students to list all the areas they think
would benefit from scientific research.

Social Studies—Ask students for solutions to
current events, social problems, school prob-
lems, or problems within their classroom.

Ask students to list all possible ways in
which education could be improved.

Ask students to think of all the means and
methods they might use in improving and
erlisting support for the humane treatment
of prisoners, prisoners of war, the elderly,
or minority groups.

Music—As a class, write a variety of lyrics
for a new song. Ask students to make a
list of song titles that would have appeal
for a particular group of people. Consider
a teenage group, an adult group, an ele-
mentary school age group.

Ask students to list folk songs, patriotic
songs, songs from other countries.

Art—Have the class list as many titles as pos-
sible for a painting or picture.

Ask students to list as many art materials
as possible. Future art projects can be
determined by referring to such a list.

Display a still-life picture. Have the stu-
dents draw or sketch the items on the still
life picture in as many different arrange-
ments as possible.

Physical Education—List all of the games that
develop coordination, that develop leg
muscles, or can be played using a ball; all
that rely on sharp visual perception.

Evaluation: Have students list all possibilities for
pollution as an unused natural resource.

SENSE-SATION

Talent Development Objective: To help students develop fluency, flexibility, and originality by participating in different activities requiring divergent thinking and concerning sensory perception.

Teacher Note: The ability to really observe is one that requires practice. As children begin to explore and expand their thinking, their ability to respond with a variety of possibilities increases. Such expanded thinking leads to creative problem solving, forecasting, communications, planning, and decision-making.

Activity: Collect pictures from magazines. Ask each student to select one picture. Now ask the student to tell or write all possible situations that might have occurred just before the picture was taken. Ask them what might happen next. How did the picture make each student feel?

Activity: Collect an assortment of interesting pictures. Select one picture and have the students ask as many questions as they can regarding the picture. When the discussion ceases, ask the students to write their impression of what they think really happened in the picture. How does what they see relate to what they think?

Activity: Have students bring boxes, buttons, rick-rack, pipe cleaners, sequins, scraps of material, etc. Let students make as many things as they can from the assortment of "junk". Allow room for the creations to be displayed. Let other students write as many impressions (stories, titles, poems, or songs) as they can about the creations.

Activity: Bring samples of spices or unfamiliar food to school. Blindfold a student and have him taste one of the spices. Ask him to give as many responses as possible concerning what he has tasted. How many words can each student think of to describe the new taste.

Activity: Show students only part of a picture covering the other part in some way. On the basis of incomplete data, ask students to write as many responses as possible of their impres-

sion of the picture. Compare impressions to the complete picture.

Variations might include showing magnified pictures, listening to unidentified sounds, identifying unknown odors that might be produced using air freshners, perfume, food extracts, etc.

Activity: Show highly colored magazine pictures. Ask students how they think color affects their emotions. Have them imagine a day when everything turns yellow or some other color. How would such a change affect their moods, their safety, their enjoyment of food, etc. Imagine and describe what would happen on a day when everything was black, white, or gray.

Activity: List things that are big. Make another list of things that are small. Now view both lists from the point of view of an airplane pilot, a baby, a beetle, a giraffe. Discuss with the students what happens to the concept of size from different points of view.

Activity: Show a picture of a person with a definite facial expression. Have each student write a sentence telling what he thinks the pictured person is thinking. Compare ideas to show different reactions.

Activity: Explain that some people have a limited capacity for feeling pain. Have students discuss what the inability to feel pain might mean, what would be the advantages and disadvantages? What unique problems would this kind of a person or an animal have?

Write or tell the adventures of a person or an animal who could feel no pain.

Activity: Discuss with the students what life would be like without one of their senses. What other sense might compensate for the loss of one sense? Have each student choose a sense and imagine they have lost this particular sense, then write a story describing his life listing all the ways in which his life would be affected.

Activity. Read *The Blind Men and the Elephant*, by John G. Saxe. Discuss the fact that we

all perceive things differently according to our experiences. Let them imagine and then tell or write about familiar things from different points of view.

Examples: How would a tree trunk look and feel to a caterpillar?

What would a sun flower seem like to an ant?

What might a baby see when it crawls about on the floor? Think of people, furniture, toys, a carpet from the baby's point of view.

Activity: Have students list the sounds, tastes, smells, sights, and touch sensations of Halloween, Christmas, Thanksgiving or Spring.

Activity: Have students experience touching fur, steel, hairbrush bristles, etc. Have them describe how these articles feel to the touch using as many descriptive words as possible.

Activity: Blindfold a student. Have the class give spoken instruction to him as to which steps to take, directions to follow in order to find an object hidden in the room.

Activity: Discuss with the students the word "feel". Discuss its meaning as a word describing emotion and as a sense of touch. List or discuss all the ways in which they "feel" happy. You might put these sentence starters on the board or on a ditto sheet:

I can feel (touch)

Sometimes I feel (emotion)

Right now I feel

Have the students list several responses for each starter sentences.

Curriculum Related Activities:

Language Arts—List tastes, odors, touch sensations, or sounds of any holiday, season or activity. Have students use these ideas to write poetry.

Let each student pretend he is a raindrop or snowflake.

Let each relate in a story or a poem information concerning "his life".

List the sounds of the forest, the sea, the city, home, airport, or any other place. Use these lists in descriptive writing.

Math—Have students invent a method of communicating quantity without using any known number system. Example: How would you express the number 23 without using numerals?

Discuss and demonstrate how the use of concrete objects helps students to see and understand abstract mathematical concepts.

Science—Have students describe the feelings they imagine a plant would have from the time it is a seed until it blossoms and produces new seeds. Other suggestions might be to describe an atom being split, an electron speeding from generator to outlet, etc.

Have students list the ways a scientist depends upon his senses to make scientific observations and discoveries.

Have students observe something carefully (anything from a scientific experiment to the view from the window) and list all the things they were able to observe at one time.

Social Studies—Have students list unusual foods or foods from another country. Point out that foods considered delicious in one country are often not considered palatable in another. Ask, "Why do you think people in one country enjoy a food while in another country that food would not be considered good?"

Have the students discuss in groups how the climate of a country makes a difference in the way people feel and act.

Have students list problems related to safety. Then let them determine the importance of each of the five senses in relation to safety. Think of several instances in which regulations concerning safety must be observed.

Let students imagine that they are members of a community of deaf people, of people who could not taste, or of blind people. Have them list the ways in which their culture might be different from ours. What activities, jobs, recreation, etc, might be important in their lives, which would not?

Music—Play a particular musical selection.

Ask students to express themselves as to the effect the music had upon them, by either telling, writing or drawing these ideas.

List as a group the ways in which people use music; what kinds of music are used in what kinds of situations.

Have students imagine a world in which there was no music. How would their lives be different?

Art—Roll up a piece of paper or use paper towel rolls. Have the students look around the room with this telescope until they spot an interesting arrangement of objects or part of a large object. Have students illustrate what they saw as a design.

Have students look at a selection of pictures. Discuss the methods artists use to

indicate distance. Have students draw pictures of an unusual sensory experience not usually considered visible: thunder, an earthquake, a hungry feeling, a soft sound, a thought or idea, etc.

Physical Education—Arrange a regular gym class but assume that a particular sense has been lost by all members.

Examples: Play an entire game using no vocalization. Play an entire game using hand signals.

Invent a game that could be played by a blind person which would involve running, exercise, and fun.

Evaluation: Have the students list everything they can think of that tastes sweet.

TITLES

Talent Development Objective: To help students develop creative thinking skills by writing titles for a variety of happenings.

Teacher Note: You will need to help your students to understand that a title is a descriptive, creative statement that depends upon the creator's point of view. A discussion about titles might include some questions like some of the following:

- What is a title?
- Why are titles important?
- How long should a title be?
- How should a title relate to a story?

You might have the student identify things in the room that have titles.

Activity: Show students a variety of pictures of familiar cartoon or storybook characters. Have the students make lists of the character's names. Then discuss the need for names or titles. Some questions might be: What if these characters had no names? How did Dumbo the Elephant get his name?

Select a story in which a specific character is featured. Have the students invent another name for the character.

Activity: Your name is a title. It identifies you to the rest of the world. Ask students to consider names and to decide upon another name for themselves. Student's names might be descriptive (as were names of early American Indians) or they might choose another name common to their own time.

Activity: Show pictures of animals or people to the students. Try to get a selection of pictures that show a variety of situations. Let the students write titles for these pictures.

Activity: Show the students a picture, a group of pictures or selected reproductions. Some discussion questions might be:

- What things do you see happening?
- Where does the scene take place?
- Would you like to be there? Why or why not?
- What would your feelings be if you were there?
- What names would you give to the characters?

Ask students to title a picture. Using their titles, let the students write stories, poems, plays, etc. and share them with the class.

Activity: Let the students create their own abstract designs. Give students pieces of art paper, art tissue, construction paper, newspaper or any other type of art materials. Instruct students to arrange these shapes on their paper, glue them in place and then give a title to their work.

Activity: Have the students write a poem or a story of their own. Tell them to have a title in mind for their story but not to write the title on their paper. Have the students share their stories with each other in small groups and then make up titles for each other's stories or poems. Compare group produced ideas and titles with the author's original title idea. Have each student assign a title to his own work and then defend the title he has chosen.

Activity: Select poems to read to the class. Omit the titles as you read each poem. Begin with short simple poetry. Let each student write titles for each poem he hears. Compare student titles with the title given by the author.

Activity: Discuss with your students the "magic" of advertising. Have students discuss some of the advertisements — captions and slogans — that have caught their attention. Ask why some slogans are better than others.

Show samples of pictures of familiar products such as a box of soap, a tube of toothpaste, a box of cereal, a can of polish or wax. Ask students to make a caption or a slogan for each.

Divide the class into small groups and give them a product for which a slogan can be written. Give each group the opportunity to present their "ad" to the rest of the class.

Activity: Cut out articles or stories from magazines or newspapers. Omit the titles of the articles. Have the students read and then write as many titles as possible for each article. Encourage unique and interesting titles.

Activity: Cover the title of a book before reading it to the class. After hearing the story, have the students give it a title.

Activity: Discuss with the class an unfamiliar book title. Ask them what they think the book might be about. Let each student express an

opinion as to the contents of the story giving reasons for his opinion.

Now, show the book or book jacket to the class. On the basis of this visual information, see if their opinions change. Discuss why. Ask students to list books with unusual titles.

Activity: After you have read a book to the class, ask the students to think up as many new titles for the book as they can. Start out orally to get production started, then let each student make up his own list. Have each student select his best title and have him tell why. Ask students to judge between his title and the original title telling which he thinks is the best and why.

Activity: Show an unusually shaped object to the students — one that could be used as a container of some sort. Ask the students to think of all the ways in which they could camouflage this article so that the receiver would not immediately know its contents.

Invent a "before" and "after" title for each package and/or each container.

Activity: Make a mural. As a class project, discuss the mural and elicit a multiple of title suggestions. Select the best title, and discuss your reasons for this choice. The best choice would be one that could be decided upon by the entire group.

Curriculum Related Activities:

Language Arts—Give new titles to their stories in their reading book.

Your name is a title. Decide upon a new name for yourself.

Decide upon a new name for your city.

Math—The names Math and Arithmetic can no longer be used. What are all the names you could think of to replace them?

Give new names to the following symbols, 1, 2, 3, 4, 5, 6, 7, 8, 9, +, -, x, <, >, =

Science—Have the class members each create something new that would make life easier. As a class give a title to the inventions.

Give the different "star groups" such as the Big Dipper a new name.

Think of new names for modern inventions like the telephone or the television.

Name a new medicine that has been discovered to prevent old age.

Social Studies—Tell students: You have just been put in charge of naming all the streets in your town. How would you name them? Why?

You are an editor of a new national magazine. You are responsible for reporting news on minority groups. What name would you give your magazine? Why?

You are responsible for a new series of social studies books for the school. What is the name of the series? What would the different chapter titles be?

Music—Give the popular songs a new title. What would you name a newly formed group of musicians?

You are a manager for a talented performer but need a name for the new musician.

What will it be? Why?

Art—Create a new art medium — give it a title — be responsible for the advertisement of your new medium.

Name a series of paintings soon to be displayed in an art show.

Take a trip to an art museum. Compare art titles with your impressions.

Physical Education—Give a new name to today's popular sports: football to
Now give a new name to each of the various positions in the sports — fullback to

Evaluation: Have each student write five titles for today. They might consider the type of day it is, what they are doing, and what is happening around them. Such considerations should give them a wealth of material upon which to make a title decision.

INVENT SOMETHING

Talent Development Objective: To help the students develop their creativity through activities requiring originality.

Teacher Note: You are asking questions that have no correct answer so accept all answers in order to encourage fluency, flexibility, and originality.

Activity: Have the students invent new words that describe colors. Draw pictures and use your new color words to describe them. Collect items that match the new colors. The items may be grains of sand, or samples of cloth, or pages from a catalog, etc.

Activity: Machines help us do things better and faster. What would you like to do better or faster? In a discussion ask students to think of an invention that has never been invented. What invention would you like to have?

Activity: Have students draw an imaginary animal and give it a name. Then let your neighbor give it a name. Write a short story telling

whatever you can about where your animal lives, what he does, what he eats.

Activity: Have students draw on paper a fantastic invention which accomplishes a simple task in a complicated way. A creation could be: The Wind Powered Memory Machine. The wind blows a propeller. The propeller turns a shaft. The shaft rings a bell. The bell wakes up the baby. The baby cries and wakes up dad who winds up the alarm clock so he can get up in the morning.

Activity: Give students materials such as spools, newspapers, macaroni, buttons, springs, and marbles, and see what they can build. After each child has done all that he can on his creations, pass it on to another child to see what he can do to improve the original invention. The items may be passed from person to person until it can no longer be improved, or it may be worked on by committees until it can no longer be improved.

Activity: Have students take an old clock apart and see what can be built from the pieces. Ask what else can be done with all the pieces from the clock? What do each of the pieces look like to you? Of what do they remind you? How can each part be improved?

Activity: Have students use items that are normally thrown away (glass bottles, old newspapers, egg shells, tin cans, bread wrappers, etc.) and build a useful item.

Activity: Challenge the students to think of something that they think needs to be invented. Let each tell about what he thinks needs to be invented. Have an inventors club and let the members of the class give the "club" problems for which the club members will submit solutions.

Activity: Have students use a paper mailing tube for a magic telescope. Those who think they can see something in the future can look into the magic telescope and tell what they see. The magic telescope might be used to look at what the school of the future may be like, kitchen appliances, automobiles, medicine, furniture, space travel, new foods, or new toys, tools, clothes, or whatever the students think of.

Curriculum Related Activities:

Language Arts—Let the students create a collage to illustrate uses, relationships, or meanings of new words.

Have the students invent new verbs to describe things to do; adjectives to describe colors, nature, art, beauty; slang to describe feelings, ideas or quality.

Have the students invent their own symbols of punctuation.

Math—Have students create objects or ways of illustrating the different mathematical processes.

Science—Have students draw or make an imaginary machine and tell what it does; a means of transportation for the future; a teaching machine for the schools of the future; a new vehicle that could be used during any season, or a particular season.

Social Studies—Have the students create a castle, Spanish mission, ranch, or southern plantation out of sugar cubes, cardboard, etc.

Create a utopian form of government, make a diagram illustration which depicts freedoms or needs of people.

Music — Have the students create many rhythms to sing to the lyrics of a particular song; many verses to go with the music of a particular song; their own words and melody.

Have the students invent musical instruments such as pop bottle xylophones, wire cigar box banjos, tin can wind bells, etc.

Art—Have students make sand paintings, paper maché puppets, potato puppets, or hand puppets.

Physical Education—Have students create new games using objects in the room such as wastepaper baskets and balls of crushed paper.

Simplify a game for younger students.

Take the rules of one game and apply to another.

Evaluation: Have the students invent a machine or a process that would profitably use some type of litter.

INVENT A MAP

Talent Development Objective: To help foster originality in students by having them draw an imaginary land area, designate boundaries, indicate city location, location of water and major land forms on an imaginary country or state.

Teacher Note: To help a class to evaluate a real map, it is best to first "invent" a map as a group. Pick the map representation best for your grade and by using the chalkboard, invent a place.

The exercise will have to be adapted to your grade level. Your questions might include location of streets, public parks, sewage treatment plants, recreational centers, shopping areas, and schools. For very young children a map of neighborhoods might be constructed showing safe routes to school. It could include crosswalks, signal lights, and unsafe playing areas. A map of the schoolroom and a discussion of the arrangement of furniture would help the youngest children develop some evaluative skills.

Activity: Invent a map. (Choose the locality best for your grade level).

1. Ask students to name as many different maps as possible. List these on the board.
2. Choose one kind of map from the list to talk about. (e.g., a state map). Ask students to name things they would expect to find on a state map? List on the board.
3. Draw a shape on the chalkboard. Tell the class it represents a state. Have the students start planning the state by referring to the list of what a state map should show. The teacher should guide the thinking by asking questions like: Where will be a good place for the mountains? Why? What should be by the mountains? Why? How many people live in the state? What do the people do for a living? What kind of land areas are in the state? Where can people go for a vacation within the state? What is the main industry? Why? What are the natural resources?

Activity: Now each student could plan his own state map. These plans could include a lot of detailed information such as: the name of the state; where and why that name; the symbols that represent the state; natural resources; industries, farming products, and climate.

The upper grades can learn to make a scale so size can be determined. Longitude and latitude could also be included.

Activity: Have students:

1. Tell what life would be like in their state.
2. Tell how the type of weather affects the way of life, clothes, buildings, occupations, etc.?
3. Tell what the problems of the state would be.
4. Write a history of the state.
5. Chart the progress of the state.
6. Predict the future of the state.

Curriculum Related Activities:

Language Arts—Have the students pretend they are responsible for mapping an unfamiliar or unexplored area. Keep a daily diary to include maps describing the physical environment they see, animals with whom they come in contact, and the experiences they have.

Math—Have each student find the number of square feet in a room or in all rooms of a home or compute the square feet in the classroom.

Draw a map of the classroom to scale.

Science—Invent a geologic map, showing rock strata, mineral content, volcanic information.

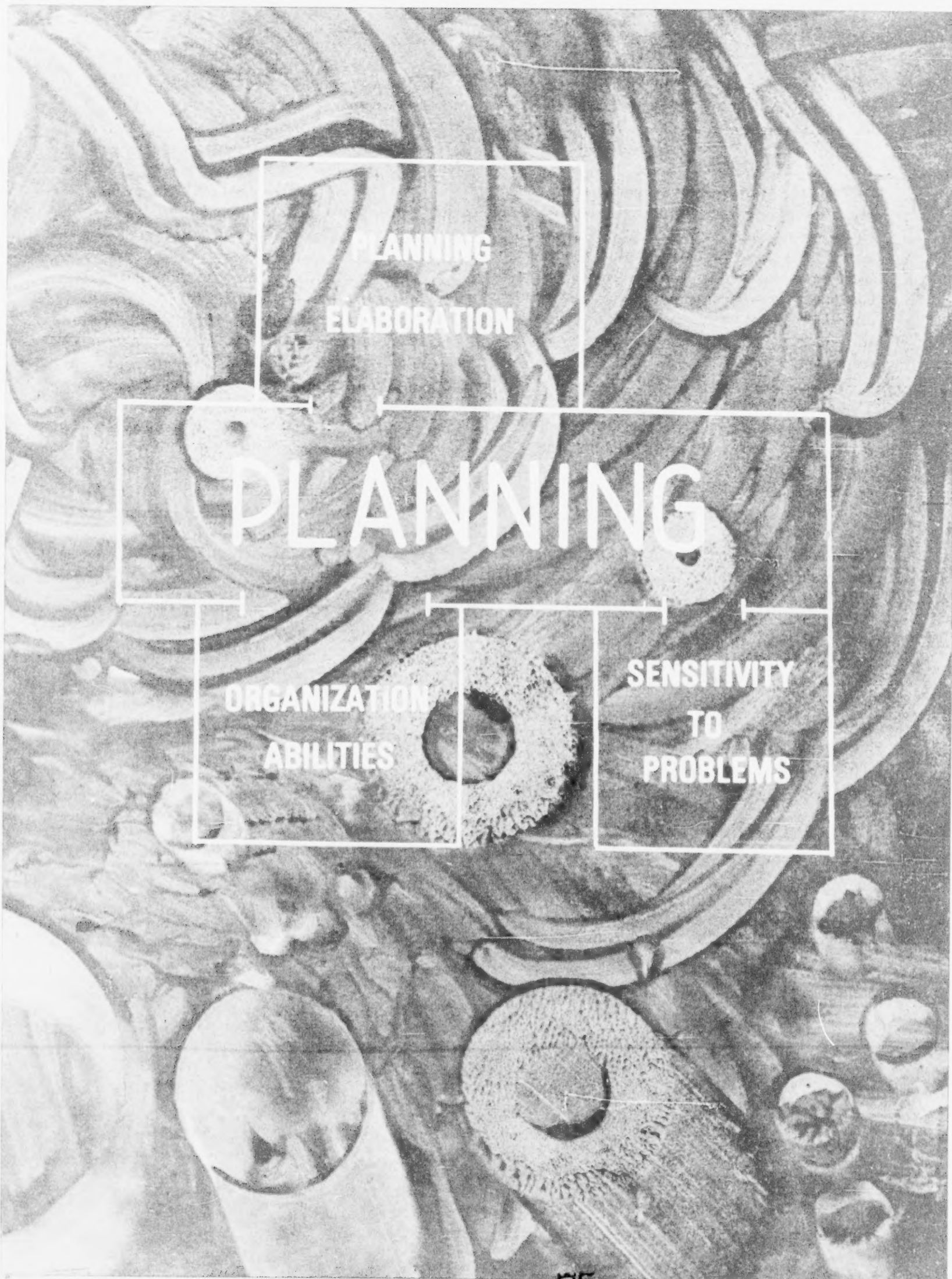
Social Studies—Discuss the relationship between geography and types of work, homes, etc. in areas of the world.

Art—Have students make a plan for redecorating their bedroom using new and interesting combinations of colors and designs the students discover themselves.

Music—Discuss similarities between written music and maps.

Physical Education—Play a known game in new and different boundaries. Plan a treasure hunt in which you follow direction from maps.

Evaluation: Have students draw and plan an ideal community; one that is just the way they think it should be.



PLANNING
ELABORATION

PLANNING

ORGANIZATION
ABILITIES

SENSITIVITY
TO
PROBLEMS

"I would rather attempt to do something great and fail than attempt to do nothing and succeed."

—R. H. Schuller

"When the active school requires that the student's efforts should come from the student himself instead of being imposed, and that his intelligence should undertake authentic work instead of accepting pre-digested knowledge from outside, it is therefore simply asking that the laws of all intelligence should be respected."

—Jean Piaget

"Learning is likely to be more effective if it grows out of what interests the learner, rather than what interests the teacher."

—Charles Silberman

"Students need to learn far more than the basic skills. For children who may still be in the labor force in the year 2030, nothing could be more wildly impractical than an education designed to prepare them for specific vocations or professions or to facilitate their adjustment to the world as it is. To be 'Practical' an education should prepare them for work that does not yet exist and whose nature cannot even be imagined."

This can only be done by teaching them how to learn, by giving them the kind of intellectual discipline that will enable them to apply man's accumulated wisdom to new problems as they arise — the kind of wisdom that will enable them to recognize new problems as they arise."

—Charles E. Silberman

"We cannot talk about anything without imposing some structure on it, without naming it, putting it in some form. Man can perceive the world as what William James referred to as a 'blooming, buzzing confusion.' But man cannot operate in the world, cannot talk about the world until he structures it in some way."

—David K. Berlo

"The more a person is able to direct his life consciously, the more he can use time for constructive benefits."

—Rollo May

"All progress as a nation can be no swifter than our progress in education. The human mind is our fundamental resource."

—John F. Kennedy

"LOST IN SPACE"

By Brad
First Grade

GUIDELINES FOR PLANNING TALENT

Planning Talent: Effective planning involves elaboration which considers details concerning operation; sensitivity to problems which need consideration; and organization of materials, time and manpower.

Planning ability is developmental. Before complex plans can be made and executed, simple planning and organizing must occur. Planning skills include:

1. Alternate planning
2. Replanning
3. Diversified planning
4. Unplanning
5. Flexible planning

Elaboration: The ability to tell what you want to do. I can identify the problem in terms of what I want, what I want to do, and what I wish to create or construct.

Sensitivity to Problems: Tell how, why, and when I will do something. I decide what information I need, the conditions that I cannot change, the effects of what I am trying to do, consequences of my acts, environmental factors and how they effect what I wish to accomplish.

Organizing Abilities: To be able to organize the materials, time, and resources necessary to get it done. How do I get materials, provide adequate work force, consider economy such as

time, limits, space, money for materials and the utilization of individual competencies?

The following teaching approaches encourage the planning talent:

Elaboration. Were students able to:

- Recognize the various alternatives in reaching this goal.
- Enumerate available resources
- Establish an organizational framework

Sensitivity to Problems. Were students:

- Aware of the outside conditions their plans might effect
- Sensitive to the effect of their actions on others
- Sensitive to the effect of the actions of others on themselves
- Aware of limitations relating to time, space, materials, abilities

Organizing Abilities. Help students to:

- List a step by step procedure
- Establish priorities
- Consider developmental sequences
- Consider organization of materials
- Consider and plan for limiting factors such as time and space

Planning is multi-stepped in nature. A successful planner knows when to start and how to logically proceed while working toward his goal.

PLANNING AN EVENT

Talent Development Objective: To help the student become sensitive to problems and to help him develop his organizing abilities.

Teacher Note: A great number of events could be included under this heading: gym periods, class parties, a field trip, etc. By doing the planning the students become involved in the activity, which in turn increases both his responsibility, involvement, and enjoyment. Such skills are also a help to the teacher. The

planning can be done either with the whole class or with a committee.

Activity: Discuss the planning process with the class. When we make a plan what must we consider? In terms of the plan, what are our needs? Do we need special equipment? How can we help everyone to feel included? What time schedules do we have to consider? Who will do what? What alternative plans should be made? How will our plan be evaluated?

Activity: Plan a Tasting Party.

At the end of a unit study, plan a tasting party. Discuss and list what foods would be appropriate. Decide the contribution each person will make — donation of food or donation of service. Decide how tasting will take place, who will serve, organization of class during party, what serving supplies you will need. Food tasting parties might consist of: foods from the sea, pioneer foods, edible foods that grow naturally around us, foods from the tropics, the four basic food groups, foods from other countries.

Activity: Planning a party.

Have the students consider the following:

- Why will there be a party?
- When will the party be?
- What will we do? What will we serve?
- What special considerations are there for food preparation, serving, cleaning up? Will there need to be any special arrangement of furniture?
- Will there be entertainment?
- What can we do if our party has to be postponed?
- How will we know our plans were good?

Activity: Plan a field trip; a study session; an interview; a hobby fair; or an art exhibit.

Curriculum Related Activities:

Language Arts—Have the students write about an exciting, a funny or an embarrassing event.

Ask students to look for descriptions of events in literature.

Have the students plan and write a fairy tale.

Have students write verses appropriate to specific events.

Math—Have the students describe the event of a mathematical discovery or fact.

Ask students to plan and then teach a mathematics discovery or fact.

Science—Ask students or a group of students to plan an experiment, a display, or a demonstration.

Have students discuss the “scientific method” as a planned event.

Have students plan a controlled experiment.

Social Studies—Have students select an historical event. Plan a reenactment of that event for presentation to the class.

Art—Have students depict in cartoon form, a successful and an unsuccessful event.

Have the students make posters advertising an event.

Design invitation or greeting cards.

Music—Have students collect music appropriate to a specific event or occasion. See if the music adds to the event. How?

As a class study the use of music as a “mood producer” in movies or television.

Physical Education—Have the students plan a gym period in which they will be the teachers. Have the students plan the activities for their own gym period.

Have students plan a field day or a pentathlon.

Evaluation: Have each student plan an overnight trip. He will travel alone and will visit someone in another city.

PLANNING THE USE OF TIME

Talent Development Objective: To help the students to become better planners by giving them evaluating and elaborating experiences.

Teacher Note: By continually evaluating the day's plans and activities, the students will become more aware of problems, be able to elaborate

on their plans, and be able to organize their time more efficiently. Students need to be helped to realize that while a plan is a guideline, it must be flexible and adaptable. To help students develop skills in planning, individual and group behavior goals as well as curriculum goal setting is an important part

of the overall planning process. It may be worthwhile at this point to discuss with the students just what behavior and curriculum goals are, and why they are an important part of their planning. You may wish to have the students experiment with a planning schedule that will work best for them.

Activity: Make plans to get to school on time. (Primary grades) Have the students tell some of the things they have to do to get ready for school in the morning.

Example: Get up when mother calls me

Wash

Comb my hair

Eat breakfast

Get dressed

Brush my teeth

Then, ask questions like:

With what things do you need help?

What things can you do all by yourself?

What are some of the things you don't like to do? Why?

How could you plan your morning so that you could more efficiently get ready for school?

Have the students share any improvements they are able to make during the week in getting ready for school.

Activity: Help students learn to organize their time and work in school by having them:

1. Discuss activities to be accomplished during the school day. Example: What things do we need to do today? What things do we need to do as a whole group? What things will we need to accomplish individually?

2. Evaluate at the end of the day what was accomplished.

Example: What did we do today? What new idea did you get from a lesson today? Which activity did you enjoy most? Why? Who do you think were the best workers? Why?

3. Make plans for the next day. Example: What could you do to improve your learning experiences tomorrow? How could you organize your time so you would be able to accomplish the assigned activities of the

day, and also have time for activities that you most enjoy?

Help the students organize blocks of time for basic classroom activities, for recesses, library periods, play practices, etc.

Activity: Preplan all daily activities with the class. Then have a "what if . . ." period. Example: "What if you finished before the rest of the class. What could you do?" Make a second list on the blackboard of the activities that could be done for those who finish early.

Activity: Have students make a list of things they can do when they finish their assignments. The teacher can make any suggestions, such as other assignments never finished, extra credit work, jobs in the room, helping other students, jobs to help the teacher. Have each student keep a running list of what he did during the day. As a final activity, have each student list how he could improve on his schedule and also what plans he could make for tomorrow.

Activity:

1. Keep a record on the blackboard of all activities done during the day (this can be done by the class secretary).
2. The last period (20 minutes), have the students rate each activity in order of preference.
3. Have the students list what needs to be done to improve each activity.

Example of a form which could be used:

List today's activities in order of preference	Why did you rate each activity this way?	What can be done to make this a better activity?
Art	We learned to mix colors and it was fun	Let's have it earlier in the day so we don't have to hurry to clean up.
Math	I don't understand it.	Don't go so fast. Help anyone who doesn't understand.

Activity: Have the assignments on the board, then have each student make a commitment as to what he plans to do during each period as well as setting an individual behavior goal for each day. At the end of the day, each student evaluates how many goals he met and how

many he didn't meet. The student gives the reasons he has for not reaching his goal and decides what he can do about reaching his goal in the future.

Activity: Have each student keep a running record of the days activity to be filled in either as different subjects are given or preferably, every 15 or 30 minutes.

Time	Subject	Did I finish my work (yes or no)	Amt. of time I worked	Amt. of time I wasted	How I plan to better use my time
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Activity: Fill in the following as a class, or mimeograph and do as individuals at the end of each day.

Subjects I studied today	Time of day I studied each subject	How I rate the period (fair, good, excellent)	Why I rated this period as I did	How can we improve this period	What I did today on the subject
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Curriculum Related Activities: (The following ideas concerning the study of time itself might be interesting to include in the curriculum while the students are developing skills in planning their own time.)

Language Arts—Write a story telling how you planned your day, the day all the clocks stopped.

Show different periods of time on a pictograph.

What affect has time had on language?

Trace a word and its meaning over a period of time. Find out why it has changed its meaning or spelling.

Math—Why is the calendar year different from the ordinal of the century?

Why is there a leap year?

Why are there 60 minutes to an hour (base 6) rather than 100 (base 10)?

How is the military time system different from the regular time system?

How can you use an odometer to calculate time spent traveling?

Science—What are the different methods for telling time?

Why might new methods for telling time be important in the future?

Why is so much value placed on the accuracy of a time piece?

How would you make a sundial, hour glass, candle, or water clock?

How does a pendulum clock work?

How can a free swinging pendulum show the rotation of the earth?

If perpetual motion was solved, how would it affect time pieces?

How does astrology relate to planning time?

How does the theory of relativity affect our ideas of time?

How are cycles related to time?

How are life cycles in plants related to time?

How do animals tell time?

How is time important in planning space shots?

Social Studies—How does the meaning of time differ from culture to culture; from one age to another?

How did man plan before the advent of time pieces?

How does climate affect planning concepts?

How does religion impose planning?

Compare calendars of Incas, Egyptians, Chinese, and Gregorian.

How does the time factor relate to military success or defeat?

What is the international dateline?

What problems are inherent in fast travel moving from one time zone to another?

Art—Draw a picture of 3:30 A.M.

Design a clock face.

Chart or draw time pieces or calendars through the centuries.

Compare the changes of art over a period

of time and analyze in terms of color, style, idea, etc.

Music—Analyze time and sequence in music.

What is the importance of time in music and dance?

Compare rhythms in music and dance.

How does the time of music set a mood?

How can time create a musical picture?

Physical Education—How does physical training relate to time?

How does coordination relate to time?

Set up a criteria of performance in some physical skill correlated with time.

Evaluation: Have each student evaluate their last physical education period, and then plan how they would like the next one conducted.

PLANNING A GARDEN

Talent Development Objective: To help develop organizing abilities and sensitivity to problems within the student.

Teacher Note: These plans may be executed and evaluated. You may prefer to produce as blueprints or just as discussions. Be sure to evaluate and replan so that students can see the need for flexibility in planning activities.

Activity: Plan a Terrarium. Discuss what a terrarium is with your class. Build a terrarium with your class. Have your students list all the materials that are needed to build a terrarium. Instruct the class to write or draw the sequence of steps in building the terrarium. Have the class make a list or draw the steps describing how they are going to build their own terrarium. Each student should produce his own plan and evaluate the plan when the work is completed.

Activity: Plan a mini-garden. Have each student be responsible for bringing to school a container

of soil or have a mini-plot prepared for the whole room.

1. List on the chalkboard all the different problems to consider before planting the mini-plot. Some things to consider:
 - a. What environment is necessary if plants are to grow?
 - b. Determine what kinds of plants are to be planted.
 - c. What kind of care will each plant require?
 - d. What plant colors will make the mini-garden look pleasing?
 - e. What other things can be added to the garden to help decorate it?
2. Evaluate the answers to the above questions so decisions can be made.
3. Have the students make a list of things that need to be done in the order that they need to be accomplished.

4. Have each student make a drawing of the garden as a visualization of his plan.
5. Have students evaluate their plans. What were the good things about the plans? What things were unworkable? How would you improve upon your next plan?

Activity: Have students plan a flower or vegetable garden for their yard at home. Make a drawing of their plans.

Activity: Have the class plan a garden or flower bed that could be planted somewhere on the school grounds.

Activity: Plan a vegetable party.

1. Have the students list all the vegetables they have tasted.
2. Discuss which vegetables are presently "in season".
3. Decide on what kind of vegetable party you want — tasting party, just showing, cooked vegetables, etc.
4. What things should be considered and included in the plans? What things need to be provided; who will bring what; who will do what?

Curriculum Related Activities:

Language Arts—As a class or individually, prepare a booklet on flowers that includes poems, facts, pictures, and diagrams.

Math—After giving certain measurements for a flower garden, have the class plan the

number of plants and the number of rows necessary for a garden.

Design and plan a floor plan for a new nursery.

Design and plan a flower box for your home. Figure the cost and the amount of the materials.

Science—Have students plan a unit of study on seeds for either their own grade level or a younger grade level.

Social Studies—How does "nature's plan" determine survival and adaptation? Plan a garden for an area with adverse conditions. Example: Farming in Israel or Salt Lake Valley.

Have students evaluate plants and their life cycles as the "plan of nature".

Art—Have students create a wallpaper design using three kinds of flowers.

Make a mural showing results of a science unit about plants.

Music—As a class create a song about plants and plan how to share it with another class.

Evaluate "Pastoral Music". How does it describe nature?

Physical Education—Have younger students pretend they are a seed growing in the ground and then do creative dance being the full grown flower.

Evaluation: What type of trees should be planted around a school ground? Tell why you suggested the trees you did.

PLAN A TRIP

Talent Development Objective: To help the students understand the importance of elaboration and sequence in good planning.

Teacher Note: A plan, to succeed, must follow a logical sequence and must deal with criteria important to the plan's outcome. A plan will not succeed if it becomes too concerned with unrelated criteria or if each step is done in the wrong order. The following activities help

to build elaboration and sequence skills as they relate to successful planning experience.

Activity: (Primary Grades) Plan a "walking trip" with your class. Make a map of the neighborhood. Show the map to the students. Discuss places to visit in the neighborhood that would be interesting. Locate these places on the map you have made. Decide where you could go on a walking trip. Plan the best route to take

considering safety, time, and distance. Discuss particular rules that should be observed on the trip. Plan ways of reporting the trip to others.

Activity: (Primary Grades) Have your students help plan a unit of study about community helpers by asking them to tell about the occupations of their parents. Have students give reports and make charts about the occupations of their parents. Plan a trip to visit one or more of the parents at their place of work. Plans must include evaluations of which places of work could accommodate us; which places we would like to go; how we will get there; how much it will cost; when to write letters for permission to go with the class; and making a list of things to look for on the trip.

Activity: Divide the class into groups to plan a trip or have the students plan a trip individually.

- I. Planning a trip to
- A. Things we will need to take.
 1. Clothes
 - a. Best suit or dress and accessories
 - b. Outer clothing
 2. Medicine
 - a. First aid kit
 - b. Vitamins
- B. Things that need to be arranged for at home.
 1. Animals
 - a. Care and feeding of animals
 - b. Food supply
 2. Services
 - a. Mail service stopped.
 - b. Newspaper stopped.

After the students have planned their trip, it will help them develop sensitivity to problems that arise if you will give them problems to solve such as: Your plans have suddenly been changed. You will have to use another mode of transportation for your trip. What changes will have to be made in your plans? Your father said, "I can't fit in all these things — something will have to be left at home." What could you leave at home without changing your plans too much? You lose your money while on your trip. What will you do? How will you arrange to get home?

How will we avoid accidents or losses?

Determine how we can share things we learned on our trip with others, i.e., making a mural, writing stories, play-writing, composing songs, etc.

Activity: Plan a trip to the airport. Have the class discuss different kinds of airports.

Discuss all the occupations that are involved in operating an airport. Have a committee contact the airport manager to arrange for a tour of the airport. Plan how the class will get to and from the airport and find out the cost of transportation. Plan safety rules to be followed on the trip. Plan ways to share the knowledge of airplanes and airports with others. Example: make a mural, draw pictures, make reports, write stories about a trip on an airplane. Assign a committee to report how airports have to be continually improved to keep up with changing times and technology.

Activity: Tell students that they are going to plan a trip, one they have always wanted to take. Have them list things that have to be considered before planning a trip such as destination, means of transportation, period of time it will take, expenses, weather conditions, date of departure, number of people going on the trip, etc. Guide the students to the understanding that categorizing helps their planning to be more efficient. Have students suggest some categories. Write these on the board and then have the class develop and elaborate upon these categories.

Activity: Plan a campsite. Ask students to make a drawing of how they would plan a campsite. Plan where they would place a tent, build a fire, place the table, etc.

Have students list all factors of the environment that would affect their campsite.

Activity: Building a campfire. Ask students: What kind of places are suitable for a campfire? What materials will you need to build a fire? How would you arrange the materials so the fire would start? If there is no grate, how will you cook?

Activity: Have students plan a field trip; a nature walk; a picnic; an overnight slumber party; a

progressive party; a bike hike; a trip to grandmothers; or a trip to do Christmas shopping.

Curriculum Related Activities:

Language Arts—Plan an advertising campaign urging people to visit your state or country.

Be a travel agency. Write advertising to get people to use your agency.

Write news stories about some famous trip; Marco Polo, Columbus, Astronauts.

Write a travelogue about a trip through your state.

Pretend you are an explorer and write a journal recording your trip.

Math—Calculate the amount of weight to the amount of thrust for a rocket.

Calculate the mileage for a trip.

Calculate the cost of a trip, including gasoline, lodging, food, etc.

Calculate the cost of a trip around the world comparing the cost of different means of transportation.

Plan a trip for your family with a \$200 budget.

Science—Plan a trip to another planet.

Plan a trip in a Bathosphere.

Plan a trip across the ocean by boat, by submarine, by sailboat.

Social Studies—Organize a world tour.

Plan a vacation you would like your family to take.

Plan a summer or winter trip to Yellowstone National Park.

Plan a military campaign.

Plan an attack on a castle.

Plan a trip by ox cart.

Select a place in the world for a new discovery of gold. How would you get there and what would you take?

Your city has been chosen for the Olympic events. What plans will the city have to make for the influx of visitors.

Plan the excavation of the ruins of an old civilization.

Art—Make a mural that depicts the trip of an explorer; that shows the changing modes of transportation; that charts the passage of stars across the sky.

Music—Plan background music for a travelogue.

Physical Education—Plan exercises that would help you while you are traveling long distances by automobile.

Evaluation: Ask the students to plan a trip to the moon one hundred years from now.

ADVERTISING MESSAGES

Talent Development Objective: To help the student gain insight into details and organization in planning advertising.

Teacher Note: This set of activities will function best when the students have had some previous experience in planning. The students will identify and become familiar with different types and styles of advertising. They will then apply this information in their own advertising campaigns.

Activity: Have your students discuss as a group: What is advertising; why do we need advertis-

ing; in what ways does it perform a service; where do we find advertising?

Activity: Plan an advertisement—accents on eye appeal. Have students bring papers and magazines from home from which to cut out ads they like or dislike according to appearance or layout. Ask the students to critically evaluate the ads to determine what they like or do not like about the ad's appearance, i.e., eye appeal, spacing, lettering, color, etc. Have them make their own criteria as to attractiveness when making an ad; then have them make an ad

selling a vacation place in their state following their own criteria.

Activity: Plan an ad directed toward a specific market appeal. Have class think of all the categories of buyers there are, i.e., sport enthusiast, brides, home owners, do it yourselfers, etc. Then have them think of all the tourists that might come to your state. What might be their special interest categories, i.e., sportsman, mountain climbers, photographers, etc. Have students take the market appeal ad and re-do it using the original criteria plus criteria that will appeal to a specific consumer or market.

Activity: As a class, discuss the qualifications and requirements for a school or class office. List the qualifications on the board & chart them. Have each candidate make a list on his own qualifications and have him state why he could best fulfill the requirements of the position. Then let the candidates and their committees discuss methods of campaigning and advertising. They will plan how to best advertise their candidate's qualifications and then execute the plan.

Activity: Plan a campaign to improve self-image. Select a student to ask other students what makes them feel happy. When do they feel sad? Collect pictures of people and animals that have emotional interpretations. Make up slogans about these pictures. Example: "Stamp out slander." "We cut paper not people." Let each student plan how to turn his slogan into a poster than decide where it can be displayed to have the greatest affect or impact.

Activity: Plan a campaign to encourage courtesy — make a list on the board of the students ideas of ways to show courtesy and good manners in the school room, halls, cafeteria, etc. Have them make up slogans about their ideas. Let each plan how to turn his slogan into a poster and decide where it can be displayed to have the greatest affect.

Activity: Have students plan advertising for:

A school hobby show
Fire prevention campaign

School safety campaign

A class program or science fair.

Activity: List on the board, as your students recall, all of the things and places in your state that might appeal to a tourist. Have students categorize the list according to areas of interest. Have students divide into interest groups to develop an advertising campaign for the area of their choice using all means that they consider feasible.

Activity: Have students recall some slogans used by advertisers and then discuss their effectiveness. Have students think of slogans that they could use to advertise their state. Have them use their slogans as the basis for making an ad to sell their state. Have students discuss all the ways they could advertise, and the media they could utilize to advertise their state.

Curriculum Related Activities:

Language Arts—Plan a slogan campaign to encourage students to become better spellers, more effective speakers and more attentive listeners.

Plan a campaign to clean up a vacant lot or some other area.

Math—Discuss or have available the various advertisements put out by local stores, then let each student write up his own ad using as many mathematical processes as he knows in figuring the final cost of an item.

Plan an advertising campaign to make students aware of the common encounters they experience with math as an adult.

Science—Plan an advertising campaign to increase tourist travel to the moon.

Plan advertising for a new invention for the use of non-polluting products.

Social Studies—Plan and organize a campaign about a part of history that each student especially likes.

Plan an advertising campaign to increase enlistments for Crusades, Hannibal's expedition, or for Napoleon.

Plan a campaign for getting a traffic light on a dangerous intersection.

Art—Plan an art show and advertise it.

Physical Education—Organize an advertising campaign for a marble or volleyball tournament.

Organize an advertising campaign for basketball, football, and jump rope equipment made from a new material.

Advertise a marble or hopscotch tournament.

Evaluation: Write a newspaper ad to sell nine St. Bernard puppies.

DRAW A PLAN

Talent Development Objective: To help the student become aware of the organization and complexity of planning, flexible planning, re-planning.

Teacher Note: You may want your student to draw a plan of their own house or a plan of what they consider to be the ideal home. In either case the students need a frame of reference (in terms of the size of the rooms) so have them measure their rooms at home. They will then have these figures to use as a comparison. You may want to start with just a room and increase in complexity to a cabin, a house, and a school. Younger children might find it easier to draw their classroom first.

Activity: Have students draw a house plan. Have students measure rooms at home, looking at what is familiar to help them evaluate size and determine if the size is adequate or not by comparison. Due to actual realities of planning, adjustments have to be made despite preferred size. Then redraw the adjusted house plan size.

	Size	Preferred Size	Adjusted Size
My House:			
Parent's bedroom			
My bedroom			
Bathroom			
Kitchen			
Recreation Room			

What do you consider important to include in your house? How would you make houses

more liveable? What would you include that isn't in your house now? What building materials would you use?

Let each student plot his house on graph paper to scale. Have the students find out the prices of carpeting and tile and compute what it would cost to carpet each room. He will have to decide what price carpeting he can afford. Have students compute the price of carpeting, tile, and linoleum for the kitchen and bathroom. Have him make a choice of floor covering and give reasons for his choice. Have each individual student evaluate his plans and improve upon them.

Activity: Use Lincoln Logs (or any other type building blocks) and build a house from a house plan drawn by the student.

Activity: Draw your home. Have students measure rooms and the outside circumference of their homes. Then have them plot their homes on graph paper letting them determine the scale. To some it may be easier to plot the outside first and then fill in.

Activity: Have students draw a plan of their own classroom. Next let them replan the arrangement of the furnishings in the room according to their own choice.

Activity: Have the students find out what new buildings are being constructed in their community. After looking at the construction in progress decide what they think these buildings will look like when completed. If possible, obtain the blueprints of the building and then compare the blueprints with previous student impressions of the completed structure.

Activity: Have the students plan their own tree house or doll house.

Activity: Have the students plan their own summer cabin. Consider:

1. Purpose
2. Location
3. Land
4. Foundation
5. Building material
6. Labor
7. Utilities
8. Furnishings
9. Costs

If possible have them construct a model or draw pictures of the finished cabin as well as the plans.

Activity: Plan a sugar cube castle.

Stick at least four pieces of graph paper together. The paper measured in half-inch squares is ideal as it is the size of the sugar cubes.

Have two or three students plan a blueprint of a castle on the graph paper blacking out a whole line of squares for each wall.

Have students plan in what order they will build the castle.

Have others plan the rest of the diagram.

Have the students bring sugar cubes. Glue can be used as the mortar or a mixture of powdered sugar, egg whites, and a small amount of water.

Curriculum Related Activities:

Language Arts—How could literature books and story books be made more interesting? Plan the improvements and changes that could be made and would improve literature and storybooks?

Math—Plan the construction of a puppet stage for your room or school. Figure the size, quality and needed materials. Calculate or estimate the cost for this project.

Science—Have students plan an experiment and print it on a chart showing the processes involved.

Social Studies—Have students plan a chart showing the important events or inventions during a specific era.

Art—Have students draw the plans of a new park or playground.
Have students plan and draw an improved city.

Music—Have students make charts of familiar songs planning the type and placement of the printing and the most effective illustration for the songs.

Have students make up an original melody and print it on the music staff.

Physical Education—Plan or outline a new game. Draw plans of the playing field, equipment, etc. needed for the game.

Evaluation: Have the students draw plans for a twelve member club house.

PLAN A SYSTEM

Talent Development Objective: To help the student become aware of the many different aspects of planning such as divergent planning, convergent planning, alternate planning, re-planning, and flexible planning.

Teacher Note: A system might be defined as an organization of materials into an interdependent functional unit. In planning a system students may need to be led to understand the interdependence of seemingly independent

activities or roles. For example, a well organized classroom is a system in which all members work together to plan, organize and execute activities. If one class member fails to perform within the framework of the system, the whole system is weakened.

Activity: Plan an aquarium. Have the students plan for an aquarium in the classroom. What are the things to consider? What kinds of fish do we get? What will they eat? What kinds

of care will they require? How will we pay for it? Who will do what and when? Make a master list on the board of the ideas generated by the students and plan together how to obtain and maintain the aquarium.

Activity: Have the students plan a wild west town. Find pictures of wild west towns. Discuss and list on the board what it would have been like to have lived there and list what things were typical of the town and the times. Have the students decide how they would like to reproduce their ideas. Example: mural, diorama, write a story and illustrate, or write a play and make scenery, etc.

Having decided on a medium, have the students plan what things they have to consider, what materials to use; and who will do what, when.

Activity: Have the students plan a doll house or plan for the care of a classroom pet.

Activity: Plan an ant farm. Discuss: type of container, soil, capture of ants and food schedule.

Activity: Plan a town. Ask students what things they would consider when selecting a geographic location? Examples: Access to water; chance to connect to established transit lines; weather; etc. What facilities and things in their present town would they want to include in their new plan? List on the board. Think of everything they can that they would want to add or change to improve their town. Add to the list on the board. Organize their ideas by making a skeleton outline or by categorizing the ideas on the board. They should feel free to make their own additions and extend the outline.

Example: I. Plan a town

- A. Utilities
- B. Communications
- C. Transportation
- D. Government
- E. Recreation, etc.

Have the students consider what things they think are important when laying out their town to make it pleasing to them. Example: beauty, accessibility, spaciousness, etc.

Make a list on the board.

Have each student make a list of his own, stating criteria of need or necessity, and use it as a guide when making his own town plan. Now they are ready to make their own plan. Ask students to organize on paper what each considers to be an ideal town.

Activity: Plan a neighborhood.

1. Have the students pretend that their school is surrounded by open fields. They have the opportunity to plan the surrounding area.
2. What things are now in the area that they like and would like to keep? List on the board.
3. What are the things that they think could be improved? Add to the list on the board.
4. What things would they plan for that are not included in our area? Example: parks, play areas, bicycle areas, overpasses, etc.
5. What do they consider important in determining what would make the neighborhood pleasing to them? Example: beauty, safety, zoning and building codes, etc. List on the board.
6. Have them make their own list or criteria of what they think is important in 1, 2, 3, order and use it as a reminder when planning their neighborhood.
7. Make their plan on art paper.
8. Evaluate — did they include everything in their plan that they considered to be important?

Activity: Plan an economic system. Let each student set up a store or business around his desk. Let some students act as utility companies, government agencies such as post office, police department, etc. Arrange seating so that there is a city with a street arrangement. Make some form of money that can be exchanged for goods and services. Allow students to operate businesses, buy and sell, and function as a profit making organization. Tally the amount of money? Who has the most money? Why? Who has the least? Why? How are problems of inequality corrected in an economic system? Plan for another day's activ-

ity period in which you attempt to improve the economic system.

Curriculum Related Activities:

Language Arts—Have students plan a spelling book to correlate with lessons in phonetics.

Plan as a class or as individuals a programmed unit of instruction.

Math—Let the class plan the cost of building a community swimming pool.

Figure the cost of a political campaign.

Science—Have students plan a city under the sea; a space station, or a life support system in any hostile environment.

Social Studies—As a class, plan a system of government for your room or school.

Discuss with students communication and transportation systems from primitive systems to the most modern?

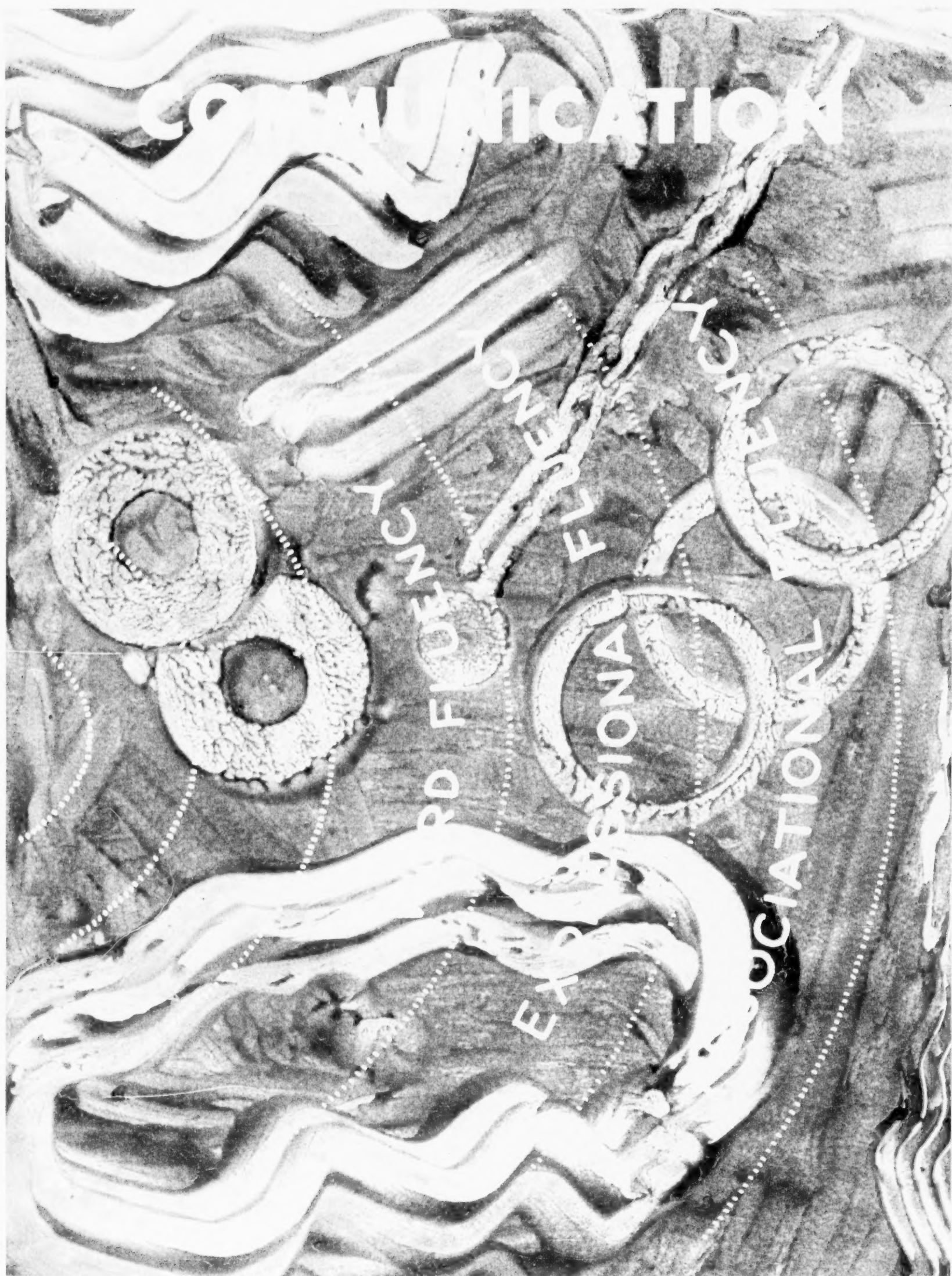
Devise a new communication or transportation system.

Art—Plan an art festival including criteria for judging, selecting, entry categories, etc.

Music—Plan a musical program which demonstrates the strengths of each instrument.

Physical Education—Plan a program or a field day for the school to show physical education skills learned during the year.

Evaluation: Have each student plan a park. Older students would draw their plans to scale.



"If people had not been able to communicate with one another, they could not have produced the pyramids of Egypt, the Gothic cathedrals, the cities of the ancient and the modern world. In fact, they could not have produced anything beyond the flint hatchet and the bow and arrow."

—Mario Pei

"Language exists only when it is listened to as well as spoken. The hearer is an indispensable partner."

—John Dewey

"By means of affective communication — by conversation and gesture when we can see each other, but by literature and other arts when we cannot — we come to understand each other, to cease being brutishly suspicious of each other, and gradually to realize the profound community that exists between us and our fellow men. Science, in short, makes us able to cooperate; the arts enlarge our sympathies so that we become willing to cooperate."

—S. I. Hayakawa

"Words can explode into bombs that destroy the world or into friendships that bring it together."

—Mauree Applegate

"We can communicate scientific facts to each other without knowing or caring about each other's feelings; but before love, friendship, and community can be established among men so that we want to cooperate and become a society, there must be, as we have seen, a flow of sympathy between one man and another. This flow of sympathy is established, of course, by means of the affective uses of language."

—S. I. Hayakawa

"The great task that affective communication performs: It enables us to feel how others felt about life, even if they lived thousands of miles away and centuries ago."

—S. I. Hayakawa

"The cooperation that makes human society possible is almost wholly dependent on the skill with which we communicate. If we do not understand each other's needs, we cannot fill them very well."

—Don Fabun

"I know you believe you understand what you think I said, but I am not sure you realize that what you heard is not what I meant."

—Harriet Parker

"MAKING COOKIES"

By Chris
First Grade

GUIDELINES FOR COMMUNICATION TALENT

Communication Talent: Communication is the cornerstone of human interaction. Effective communication involves word fluency, expressional fluency and associational fluency.

Since there are so many barriers to communication, i.e., cultures, mores, individual goals, national goals, etc., effective communication skills become very important to sensitive understanding.

The ability to communicate has several developmental facets. These, we have defined as:

Expressional Fluency: Saying what you mean; giving a concise expression of your thoughts, ideas, and needs. Understanding non-verbal forms of communication such as gestures, facial expressions, and body attitude.

Association Fluency: Understand the interrelation of things. How might my thoughts and ideas be compared to other experiences I might have in common with those with whom I am communicating.

Word Fluency: Use words to give concise meaning. Use words to add color, beauty, depth of expression. Use words to convey emotion and value.

Some criteria to help you evaluate communication processes might include:

Expressional fluency: Help students to:

- Make themselves understood by others

- Communicate a need to someone else.
- Communicate a feeling.
- Express an emotional reaction which relates to their past experience.
- Understand someone else's statement of need.
- Understand someone else's emotional reaction.
- Communicate a message non-verbally.

Association Fluency: Can students:

- See how words or actions are interrelated.
- Describe by comparing.
- Use and understand analogies.
- Use and understand similes.
- Use adjectives and descriptive phrases.
- Compare ideas with experiences.
- Compare emotions with experiences.

Word Fluency Help students to:

- Select words having a concise meaning.
- Use descriptive words or phrases to add color, beauty and depth to expression.
- Describe emotion.
- Describe preference.
- Describe their likes and dislikes.

Since a breakdown in communication skills most often precedes stress between individuals, groups, or nations, an increased ability to communicate will lead to more depth and understanding in the human interaction process.

TELLING SOMEONE ELSE

Talent Development Objective: To help students develop better communication skills by working with descriptions and directions.

Teacher Note: In giving directions the student becomes much more critical of the communication process. He must evaluate what he says in terms of what he means and what someone else thinks he means. Often there is a need to

recommunicate until understanding is reached. These exercises not only help communication skills on a verbal level, they increase listening abilities.

Activity: Have the students describe their school room to a child in another school or country. Tell what color the walls are painted, how many windows are in the room, which way

the room faces, what the chalkboard looks like, and what kind of furniture and equipment is in the room.

Activity: Select one student from the class and ask him to pretend that he is a tourist telephoning from the local airport. The tourist wants to visit your school and wishes to know how to get there. Choose another student to talk to the tourist and give special directions to get from the airport to the school.

Activity: Choose students to take turns giving directions to their classmates on how to find their homes from the school. Have them give directions to another room in the school.

Activity: Have the students take turns describing a friend according to his attributes as clearly as possible, without telling the friend's name. Can you guess who the friend is?

Activity: Plan a treasure hunt. Ask the students to pretend that they have buried a treasure. Give the students a chance to give directions to someone else which will lead to the treasure's burial spot. If the student gives clear directions, the treasure will be found.

Activity: Give each member of the class a piece of paper and a pencil. Choose one student to come to the front and describe an object. (Start with very simple objects first, such as a toothbrush, a water glass, ball, etc.) Instruct the rest of the students to draw what they think the object is. The student describing the object may not give the object's name or specific use.

Activity: Have the students pretend that they cannot speak. Instruct them to find as many ways as they can to communicate without using a spoken language.

Activity: Have students originate and decide upon a set of classroom signals or cues which communicate: clean up, come to the carpet, silence, etc.

Activity: Choose one person to follow directions. Choose another person or group of people to give directions. The group giving directions will decide upon some activity (such as iron-

ing, driving a car, etc.) and will tell the receiver of the directions what to do with his hands, arms, feet, head, etc. You cannot tell him what he is doing, only how he should do it. Then, the other students will guess what the person is acting out.

Remember that the person following directions does not know what he is doing, he is only acting as directed.

Activity: Create "universal" traffic signs and signals which can be immediately recognized by people regardless of language.

Curriculum Related Activities:

Language Arts—Use students as teachers; allow them to give directions relating to any learning process. Let students direct creative writing experiences, Haiku, limericks, how to build suspense in a story, how to write a letter or punctuate a sentence.

Let students interview one another, let other class members direct the interviewer and applicant.

Math—Tell students to give directions to another class member for an arithmetic process or a series of processes. Dictate a mathematical problem to be solved.

Have student give a mathematical sequence to test others for number sequence recall.

Science—Have students give directions, step by step, to other students on how to do an experiment, prove a theory, or how to show a cause and effect relationship.

Social Studies—Have a student give directions to be charted on maps by other students of routes from one location to another; of trips of explorers; of migration routes; of paths of conquering armies; etc.

Let students select a site and then send a message giving the location of their shipwrecked crew. They must direct a rescue team to their present location.

Art—Let students direct other students in the mixing of colors, hues, blends. Compare

the results of participants, why did color results differ?

Let a student give direction to a friend or the class on how to organize a mural or how to use different art media.

Music—Let one student tell another student how to put an instrument together, how to play it, how to clean it.

Let students try to teach others how to read music.

Physical Education—Give students the opportunity of explaining a new game or the

rules of a game to the class.

Divide class into small groups. Have each group learn a simple skill or game and then have the groups teach what they have learned to a class of younger students.

Evaluation: Have each student construct a geometric figure. Students will then describe their figure in writing (orally if they do not write) so that it can be reproduced by others from their description.

GUESS WHAT

Talent Development Objective: To help the student develop expressional fluency, associational fluency and word fluency through descriptions.

Teacher Note: This exercise is designed to help the student to become a more effective communicator. Because descriptions are an integral part of communications, the development of skills in describing becomes the goal of these exercises. In order to encourage the student to rely upon descriptive words, specify what can and cannot be allowed in the description. For example, stipulate that you list the attributes of an object but you may not tell what the object is.

Activity: Have the students describe how they would feel if they were a tire on a bicycle.

Activity: Have the students feel an unidentified object. On the basis of touch have the students describe what it is and how it is used.

Activity: Put an object in a sack. Have the students feel the sack and allow children to shake and move it. Have them describe what they think is inside the sack.

Activity: Bring an unfamiliar object or an unlabeled box. Have children describe what they see and what they think might be inside.

Activity: Have students decide upon an object or an occupation. Have them describe what they

are or what they do in general terms. Do not let the child tell what he is or give specific information as to a specific function. The limitations will depend upon the age of the student.

Examples:

Primary grades: "I help people. You can call me on the telephone. I come to your house. I put out fires. Who am I?"

Intermediate grades: "I wear waterproof clothing. I sometimes drive heavy equipment. I use water and chemicals to help me to do my job. I work at airports, in cities, in towns for large companies. I am always on call. Who am I?"

When using the occupation of fireman with an older child the rules might state that the word fire and man could not be used in any way. This set of limitations forces associational fluency, word fluency and expressional fluency as the child tries to describe himself in a given role.

Activity: Prepare a box of unrelated items. The items might include an old toothbrush, stapler, shaving brush, book of matches, shotgun shell — include any odds and ends you can find around the house or the school.

Select a child and ask him to look at the items in the box. Do not reveal any of the objects to the rest of the class. Ask the student to describe one of the objects. Based upon the

student's description, have class members guess what is being described. Work within a time limit. If the class has not guessed the item, show it and then have the rest of the class help with the description of the item. Example description: (a stretch watchband) — "It is metal, it is silver, something connects to each end; it stretches; you wear it." A variation of this activity would be to have one student describe an object and the rest of the class draw what they think it is.

Activity: Bring walnuts to school. Have the students carefully break them in half. Ask children to collect and to put inside the shell as many items as possible. Write a description of the items they put within their walnut shells. Let other class members try to guess what they have hidden in their shell.

Curriculum Related Activities:

Language Arts—In the form of a descriptive paragraph, poetry, Haiku, or prose, have the students describe a scene in nature; an event they have witnessed or experienced; or textures, smells, tastes, sounds, and emotions that they have experienced.

Math—Have students give a description of a mathematical process for geometrical shapes.

Science—Have students describe an experiment or process. Describe things as they are found in nature.

Social Studies — Have students describe a setting, an event, an historical figure, an era in history, working of governmental systems, social forces, religious trends.

Art—Have the students describe a work of art. Describe the setting or background for a play or a mural.

Describe different art media and the effects they achieve.

Music—Have the students describe the scene that they think a musical selection suggests or how it makes them feel.

Physical Education—Have the students describe a sports event or game.

Have students write a sports news cast for radio or newspaper describing the plays.

Evaluation: Have each student describe love.

DESCRIPTIONS AND COMPARISON

Talent Development Objective: To develop better communication skills, associational fluency, and word fluency, through the use of comparisons and descriptions.

Teacher Note: Use the differences and likenesses of things to build fluency and effective communication skills. For lower grades, this type of exercise is often used to teach opposite meanings of words. For upper grades it can be used to encourage the use of adjectives and descriptive phrases to add detail and depth to their written and spoken descriptions.

Activity: Have students describe their mother and father, teacher, uncle, etc.

Activity: Have the children look at the three houses.



List the ways in which they are alike. How is number 1 like number 2? How is it different? How is number 2 different from number 3, etc?

Activity: Ask the class how observant they are? Choose one person to stand in front of the class. Ask everyone in the class to look at that person. Now ask the student to step out of sight. Then ask other students to describe:

1. The color of his hair.
2. The color of his eyes.
3. The color of his shoes.
4. The color of his glasses (an especially good question to see if they even noticed whether or not he wore glasses).

Add anything else to this list that you would like.

Activity: Have the students write a poem or a description about something beautiful they saw on the way to school today.

Activity: Instruct your class to paint a picture of the clouds they can see in the sky. Have them write a story or a poem describing how the clouds looked to them.

Activity: Have the students bring a flower and a weed to class. Observe the flower carefully. Take turns describing the flower noting color, texture, aroma, beauty, size, type, etc. Carefully observe the weed. Take turns describing the weed observing the color, texture, aroma, beauty, size, type, etc. On the board list all the things that are alike and all of the things that are different about the flower and the weed.

Activity: Have the students compare two occupations. How are they alike? How are they different?

Compare members of the family and what they do. How are they alike and how are they different?

Activity: Have each member of the class pretend to be a florist. Have them take turns expressing some of the experiences they have had with different flowers and the people who buy them. What kind of a person buys roses? What kind of a person buys violets? What kind of a person buys orchids?

A variation of this activity could be to pretend you work in a pet store. What kind of people buy what kind of dogs, cats, birds, etc?

Pretend to be a car salesman. What kind of people buy what kind of cars?

Activity: Have each student pretend they are a certain kind of flower. Have them describe what they look like and how they smell. Have the students tell why they chose to be that particular flower.

Activity: Suppose you were

Ask the students to suppose they were trapped in a mine; snowbound; lost in the woods. How would things change for them? What would be different from living in your home or being in school?

Activity: Select a student to call, "Teacher, teacher I've lost my friend." Then have the student give the description of another student in the class. The student acting as a teacher must guess who has been lost on the basis of the description given and the answers he receives to questions. Example:

Student: "Teacher, I've lost my friend."

Teacher: "Is it a boy or a girl?"

Student: "It is a boy."

Continue with answer and response until the missing person is identified.

Activity: Have students bring an assortment of materials then describe the feel of the various textures. Ask the students to tell how the textures are alike and how they are different.

Curriculum Related Activities:

Language Arts—Give a list of words to the students. Ask them to find likenesses and differences in the words. Example: algebra, animal, apple, ant. Ways alike: all start with "a", they all have the short "a" vowel sound.

Ways they are different: one is math, one is a conjunction, one is a fruit, one is living, none have the same number of letters.

Have students compare two stories. How are they alike? How are they different?

As a class, study the writing of two famous poets. How is their work similar? How is it different?

Math—Have students describe how addition and multiplication are alike? How are they different?

Have students describe how measuring devices are alike and how they are different.

Science—Grow a bean or other seed in the classroom. Let the students compare the plant to other growing things. What are the likenesses and the differences?

Social Studies—After studying a different culture, have students compare likenesses and differences between that culture and their own. Have students compare beginnings of civilizations and discover likenesses and differences.

Art—Have the students compare paintings done by one famous artist. Have them tell

how the paintings are alike and how they are different.

Display several works of art (photographs, painting, sculptures, design). Compare likenesses and differences.

Music—Play a variety of records and ask the class to describe the feelings they have about the different records. Then ask the students to describe how the recordings were alike and how they were different.

Physical Education—Have students describe two different kinds of ball games. (Example: baseball, football). Then ask the students to compare them and find things that are alike and things that are different about the games.

Evaluation: Have each student compare Monday with Friday at school.

WHAT DOES IT MEAN?

Talent Development Objective: To help the student develop expressional fluency, associational fluency, and word fluency or communication skills by gaining a better understanding of word meaning.

Teacher Note: To help students learn to communicate effectively, we must help them gain the skills necessary for using our language. The following activities are designed to help students see that a word can have more than one meaning; to help students expand their vocabulary; to help students read for comprehension rather than read words. By letting students, as a group, discuss meanings of words they gain insights into other people's experiences. This helps them to understand each other as well as to understand word meanings.

Activity: Collect pictures to use with homonyms. Show picture and say, "Who can play this game with me?" The **deer** live in the mountains. She is a **dear** little girl. Continue to give examples, until someone wants a turn.

Have the children verbalize about how to play the game. Let the class collect pictures to use with homonyms which can be mounted for other language games.

Activity: Write the word train on the board. Ask the students to think all the meanings they can for the word train. Have the students use the word in sentences to demonstrate the change of meaning.

Example: The **train** was stopped by bandits.
The bride had a long **train** on her wedding dress.
Richard is trying to **train** his dog.

Other words to use:

can	tie
air	roll
pool	hands
plant	run
story	

Activity: Show the class a picture of a symbol such as a star, a crown, a key, or a book. Select students to tell their ideas about the

symbol. Does it have the same meaning for everyone? Share your different ideas.

Activity: Ask the students to make a list of "heavy" words. Have them tell why they chose those words. Have the students make a list of "moving" words. Have them tell why they chose those words. Ask students to think of "happy" words. Record these words on the board and discuss as a group why they would be categorized this way. If someone disagrees with a word given, allow him to give his reasons.

Activity: Write the word respect on the board. Ask the class to tell words that describe the meaning of respect. List these words on the board. Then ask which word best describes respect? Each time a word is given, ask how these key words are related and how are they unrelated. Example:

	Respect	
Ability		Responsible
Obey		Love
	Respectability	

Ask: How is the word responsible related to respect? How is it unrelated? Other good words to use in an exercise such as this are:

Courage	Discipline	Freedom
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Variation: Build words — prefixes, suffixes, compound words.

Activity: The teacher or a student could pantomime a situation showing several emotions—have students decide what emotions are shown. Select students to come in front of the class and pantomime emotions of anger, happiness,

sadness, surprise. Choose others to identify the emotion, and explain how they were able to identify it.

Activity: Show any films from "Magic Moments Program", Encyclopedia Britannica. Have the students give their impressions of the film.

Curriculum Related Activities:

Language Arts—Have the students find words that have more than one meaning and use them in sentences.

Math—Have the students find as many possible ways as they can to arrive at a given number.

Science—After studying weather and cloud formations, have class watch the sky for storm warning or good weather signs and make a bulletin board or charts of what they see.

Social Studies — Have the students interpret how different maps — relief maps, political maps, road maps or contour maps are used.

Art—Show several paintings to the class and have the students relate how each painting affected their feelings.

Music—Play excerpts from several musical selections and have the students relate how each movement makes them feel.

Physical Education—Show the students implements of different games and have them tell how the game is played and what improvements could be made in the game.

Evaluation: Have students describe what allegiance means as it is used in the pledge to the flag.

VISUALIZATION

Talent Development Objective: To develop the students associational fluency and visualization as aids to better communication.

Teacher Note: The ability to visualize something, to see it in the mind as it is or as it will be, becomes very important to adequate communication and associational fluency. It is the

ability to visualize an area that makes it possible for someone to give accurate instructions or directions (how you get from the school to my house). This ability to "think what it looks like" or "think what it will look like" is required if a student is going to be able to communicate plans; communicate something he has seen in descriptive terms; enumerate

the qualities of something when explaining an item or a situation to another; or give directions that can be followed and "seen" by another person. Visualization is not the only communication tool, but it becomes a very valuable recall tool and helps to facilitate communication skills.

Activity: Ask students to think about their own footprint. Then instruct the students to draw their footprint. Have the students make a footprint in plaster of paris, on paper, in clay, with paint, etc. Compare your actual footprint with your drawing.

Use a leaf or a cutout of a leaf. Show the leaf to the class, now ask them to draw a picture of the leaf—draw the outline. Show them the object and have them trace and compare their outline with the real outline.

Activity: Have students think about the shape and draw a picture of the outlines of: a fried egg; a piece of bread; spilled milk. Use an object that is mostly flat because depth, as well as outline configuration, might tend to confuse the children. Compare these with the real thing.

Activity: Draw an outline of a location. Draw the outline of the room, your school, your bedroom, your state, your country, another country. Recalling the outline, trying to see if from a "bird's eye view" is something that many children cannot do. Use outline shapes to train for visualization recall.

Activity: Make outlines of a room you would like to decorate. Put outlines of the furniture in it.

Activity: Have the students arrange three items on their desk. First have them think what the items will look like. Now have the students place the items as they saw them in their mind. How do they look?

Have the students think of a furniture arrangement. Use a square piece of paper and arrange furniture cutouts or arrange furniture in a doll house.

Activity: Ask the students to think of a thing. An example might be for everyone to think of a toy. Have them tell about the toy they are thinking about. Be sure they tell how big

it is, what color it is, and where they keep it. Have them tell all about it and make us see it in our minds. This activity can include any object or set of circumstances. The main objective is for the children to be encouraged to try to "see in the mind's eye" an object and communicate that object.

Activity: Show the students three objects or three pictures of simple objects. Hide the objects and ask the students to recall what they were.

This activity might include a tray of objects, a few simple objects, a grouping of any size.

Recall the objects, or ask which object has been removed, or ask which is new and has just been added or use flash cards with three combinations to be learned.

Activity: Show an object to the class. Tell them to look at it carefully. Now hide the object from the student's sight. Ask them to think what it looks like. Tell them to try and see it in their mind. Then, ask specific questions relating to the object:

1. What was the object? Listen to verbal response.
2. What color was it? Listen to verbal response.

Discuss agreement and disagreement.

Whenever you feel it the right moment, show the object again. Stress the ability to look at it and then to try to recall it when it is no longer in their sight.

3. What was there that was unusual?
4. What was unusual about the color?

Use an unusual object to help the children to recall in terms of a mental image. Ask a few questions, then present the item, then remove the item and question for recall.

Curriculum Related Activities:

Language Arts—Have the students write a description of something they have seen or experienced.

Have the students write Haiku verse to describe nature.

Math—Have students describe and illustrate mathematical processes or problems.

Make up a magical square or a number machine.

Science—Have students describe what they think it would be like inside an egg, a cocoon, etc.

Have students describe the world from the point of view of an animal or an insect.

Social Studies—Have students draw the interior of a home of another age.

Have the students describe what they would expect to see if they were actually located at a given point on the map.

Art—Ask the students to draw a picture of their home as it would appear from an airplane.

Ask the students to think of the members of their family and to draw them as they were dressed this morning. Compare your recollection with the people involved.

Music—Ask the students to discuss how musical titles and music are related. After listening to an unfamiliar musical selection, ask the students to give it a descriptive title.

Physical Education—Have the students use modern dance and interpretive movement to show how someone or something else feels.

Evaluation: Have students describe what clothing will be like in fifty years as they visualize it.

SAYING WHAT YOU MEAN

Talent Development Objective: To help students develop associational and expressional fluency to aid in communicating specific information and mood.

Teacher Note: It is important for students to understand the multiple aspects of communication. Use group discussion and small group or committee discussion to list many ways in which we communicate.

Discussion should also include the many differences there are in communication and what things cause confusion in communication. Some examples might emerge such as language, dialect, cultural differences, idioms, body movement, voice inflection, facial inflection, and situations in which communication occurs.

Activity: Collect from magazines several pictures of faces. Cover the bottom half of the face and have students try to see what the eyes seem to communicate. Uncover the entire face and see if the expression of the whole face confirms what they thought the eyes "seemed to say".

Activity: Stress on words changes communication. Read the sentence. Stress the boldface word.

How does the difference in emphasis change what the sentence says?

I like the children in our school.

I **like** the children in our school.

I like the **children** in our school.

I like the children **in** our school.

I like the children in **our** school.

I like the children in our **school**.

Print each word on a card. Give one card to each of seven students. Have the student's arrange themselves in the order of the above sentences. Let the students take turns in stressing different words.

Activity: Make several word cards. Have different nouns, verbs, adjectives, and articles. Distribute the cards and ask students to arrange them in a meaningful sequence. Students can line up and hold word cards in front of them for the class to read. Or have the students arrange sentences at their desks.

Activity: Compare news items. Bring a current news item from two or three different newspapers or magazines and note the difference in reporting style. How might they be reported differently? Discuss propaganda as it

relates to a point of view. You might ask students to:

1. Write the item from the student's point of view.
2. Write the item from the teacher's point of view.
3. Write the item from a parent's point of view.
4. Write the item from a policeman's point of view.

Activity: Use role playing to demonstrate a problem that might occur on the playground or among a group of students. Discuss the communication that occurred during the "staged incident". Ask: How did the children feel? How could you tell? What did the children do? What else could they have done? How can people solve these kinds of problems? What would you do?

Activity: Without dialogue have puppets act out a situation. Discuss what you think is happening. What did the actions communicate?

Activity: Have the students pantomime the following situations. In each example arrive at a solution.

Spilled milk at home
Getting ready for school
Playing a record
Brushing your teeth
Painting a picture

After watching a person or group demonstrate one of the above situations without using words, have the class discuss what their actions told: how they felt; what they did; what might happen next?

After a pantomime list words or things a person seemed to say; what ideas the person expressed; what they could have done to communicate better what they wanted to say?

Activity: Study the different dialects and idioms of our country and find words that have different meanings to people in different parts of the country. As resources use books or invite people who have lived in different parts of the world or country.

Activity: Have the students express their feelings through creative dance. They could depict a winter storm or a spring rain; other seasons;

special holidays like Halloween, Valentine's Day, April Fool's. They could also express through dance, the various ages; young child, teenager, or grandparent. The students should also be involved in picking out appropriate background music for the different expressions.

Activity: The students could pantomime in an exaggerated form various situations common to our society. Some examples are: A questioned call of an umpire, a frustrated motorist, a hungry teenager, a flight, or various movements of animals.

The other class members could guess what the student is pantomiming and tell what form of communication helped best in making his decision.

Curriculum Related Activities:

Language Arts—Show a picture of your choice to your class. Have the class describe or tell about the picture in one short sentence. Display several pictures (preferably some done by the students). Have students make a title for their picture stressing how the title will communicate meaning intended by the artist.

Read a poem to the class. Then have students tell in one short statement what the poem communicated to them.

Math—Have students write or illustrate story problems for the class to solve.

Science—Demonstrate a science experiment and then have one or more students tell what he saw. Compare descriptions.

Social Studies—Have students write descriptions about their community or culture for their grandchildren to read.

Locate pen pals in other countries. Ask the students to describe themselves, their school, and their community to their pen pal.

Art—Have the students draw how they feel when they are very happy, very sad, or very frightened.

Music—Play a recording of marching band music and have students give a short description of how the music made them feel.

Then play a recording of a Viennese waltz and ask the students to compare it with the marching band music. Study the different musical instruments in terms of their unique sounds and describe the different feelings that each one portrays.

Physical Education—Have students demonstrate specific skills to other classes. Express feelings by creative dance.

Evaluation: Have each student convey a message to the class without using words.

HOW DO ANIMALS COMMUNICATE?

Talent Development Objective: To help students develop sensitivity to non-verbal communication and associational fluency.

Teacher Note: Help students to understand that all life, to exist, must and does feel pain. Develop sensitivity to the need for humane consideration of all living things. For example: It hurts a grasshopper just as much when its leg is pulled off as it would hurt you. All animals must feel pain in order to survive. What would happen if you could feel no pain?

Activity: Ask the students to tell all the ways in which animals communicate with man. Ask why there is a need for this level of communication. Discuss ways that animals communicate with each other, and why they feel this need.

Activity: Select one child each day for a week to bring an animal to school. Strive for a variety. Have the students keep a record of their observations of the animal for a short period of time (1-2 hours). Share the observations and list them on the board. Some questions that might be discussed are:

How do you know when a dog is happy?

How do you know when a pet is hungry?

How do you know when an animal isn't feeling well?

How do you know when your dog or pet is nervous?

How do you know when your pet needs love?

List all the ways the pet acted. What could each action indicate?

Activity: Have the students keep a daily record at home for a week telling when and why their pet communicated with them. Did the pet communicate something with its eyes, tail, or feet? How do you know?

Activity: Visit a zoo and observe animals in captivity. Discuss observations. Have the students pretend to be one of the animals they observed. What would the animal say, do, feel, think, etc? Ask why they choose to be that particular animal.

Activity: Do research on and observe, where possible, animals in their natural environment. Discuss how wild animals' lives differ from domestic animals' lives. Try to find ways these animals might communicate to others or to people.

Activity: Have a classroom pet show. Find out if the animals liked each other or if they communicated angry feelings toward each other. Try to determine if they all responded to the class the same way. Were some more friendly than others? Why?

Activity: Show animal pictures. Have the children describe the animals. Make up things the animals might be saying in the picture. Write creative stories about an adventure one of the animals might have. Have the animal be the one telling the story.

Activity: Invent animals. Use parts of animals and combine them to make one imaginary animal. Now decide what the animal would eat, where it would live, how it would communicate.

Activity: Discuss animal behavior and human behavior. What are the similarities? When do animals become frightened, aggressive, dangerous, or comfortable? Let students extend the list of behaviors. Using the same list, define when people act this way. Are there similarities between behavior and conditions when comparing the animal behavior evaluation and the

man behavior evaluation? How does this change your feelings about animals? Have students explain, "Man is the most dangerous animal in the woods".

Activity: Have role playing activities where one child is a human being and the other a pet. See if the "animal" can communicate his feelings to the human. If he fails to communicate let him talk about his feelings of frustration.

Curriculum Related Activities:

Language Arts—Have the students write a conversation between two animals.

Ask the students to write a story in which animals have human characteristics.

Math—Have the students gather information concerning the speed at which different animals travel. Compare them. Compare life patterns or living requirements of different animals statistically.

Science—Have students compare animal behavior as it relates to needs. Ask students to explain "survival of the fittest". Ask them to compare the physiology of an ani-

mal to the animal's habitat and environmental adaptations.

Social Studies—When studying different areas of the world, pay particular attention to animals indigenous to each region.

Have students relate the culture of man to the animal life available for food.

Discuss with students diet as it relates to animal life.

Art—Have students draw cartoons showing animals in conversation — or have them illustrate a story.

Illustrate an animal nursery rhyme.

Diagram or illustrate reports on animals.

Music—Provide the students with music composed to describe animals. How was the music descriptive of each animal?

Physical Education—Have students act as if they were a particular animal.

In gymnastics, have students do stunts such as elephant walk, duck walk, etc.

Evaluation: Have each student observe an animal and report on how it communicates.

BE A REPORTER

Talent Development Objective. To help the student develop systematic sequential reporting skills as well as expressional and word fluency.

Teacher Note: Have a class discussion of "the news". Stress that news is information of common interest to many people. News is exciting when it is unusual, when it solves a problem, when it is surprising, or gives information. It deals with the past, present, and future. It covers a variety of subjects and is carried by various media. News might announce the invention of the automobile, or the discovery of penicillin. News might analyze what effects an event has had upon people, like the invention of the automobile, or the industrial revolution's effect on occupations such as the blacksmith. Discuss the various news media.

Activity: Tell the class that they must report

a new discovery to the world. Ask them for suggestions. Some possibilities might be the discovery of penicillin, rocket travel, the first telephone, interplanetary communication, or the cure for cancer. Tell the class that it is their responsibility to make a news report. Ask how would they report this news to the world? List all possible news media: newspapers, television, radio, telephone, conversation, gossip, letters, telegrams, cables. Let students expand this list. Have all students make a news report using the same topic and the same news media.

Variation: Have students choose their own topic and report through the media of their choice.

Activity: Have the class break into groups. Ask each group to develop a message and choose which media they will use to report the mes-

sage. Share the completed messages and choose the ones that seem to be the most effective or interesting.

Activity: Have students report what it is like to be: a new penny, a library book, a car in a junk yard, a germ, a kindergarten child on the first day of school, a duck flying south, a turtle in the winter.

Activity: Have the students tell or write about the funniest thing that ever happened to them. This activity might include the most frightening thing, the most unusual thing, or the most embarrassing thing.

Activity: Have the students report about the most interesting thing that ever happened to them in school.

Activity: Have the students report on a trip they have taken. Where did they go? What did they do? Did they enjoy the trip? Why or why not?

Activity: Have the students discuss rumor. Discuss how a rumor is started. Evaluate the dangers of rumor as a way of gathering news and why and when it could be useful.

Activity: Choose students that wish to volunteer for a 30 second impromptu speech. Time the student for exactly 30 seconds. When the student stands, give him a fun topic on which to speak, such as: All you know about words; why it is good to be in the navy; good things to serve for dessert; the life of a baby bird; how to be a baby bird; how to be a poor sport or a poor loser; things to think about when you are standing in a long line, etc.

Set up an evaluation criteria. When a student finishes his 30 second talk, take time for the whole class to evaluate:

What did you like about the speech?
Why was the delivery good?
Was the speaker easy to listen to?

Activity: Present this problem to the students:
"There has been a world-wide power failure. How will the world communicate when there is no more electrical power?"

Activity: Have the students write news articles as if they were living sometime in ancient history or give a news report telling of the "news of the day". Times from which the student could report might include the Crusades, news from the Pilgrims sent back to England, news by Columbus sent to Spain, or headlines reporting discoveries of any of the new world explorers.

Activity: Select, ahead of time, a few students for role playing. Arrange with them to have a fight, an argument, or to cause a disturbance of some kind. Plan to let the selected students choose a time during which the disturbance will occur. Do not let the rest of the class know the disturbance will occur. Treat the disturbance as a real problem. Ask the students to write down what happened, what they saw, what the people did, and why the disturbance took place. Evaluate each student's response. Determine what the facts are. Then, define the disturbance as planned and go over it again. Compare reports with facts.

Activity: Have students pretend they are newsboys selling papers. They are calling an interesting headline — "Read all about it, ...
....." Verbalize what they would say about:

1. A big fire
2. An election result
3. The end of the war, etc.

Discuss which headlines are the most effective and why.

Discuss headlines that would appeal to different kinds of people.

Curriculum Related Activities:

Language Arts—Have students report on how to converse on the telephone.

Math—Have students report on how to solve a mathematical problem.

Science—Have students report on what they think is the greatest scientific discovery.

Social Studies—Have students report events from history (past and future).

Art—Have students report on known artists and their works.

Music—Have committees report on the development of different musical instruments.

Physical Education—Have groups report on the sports of different countries.

Evaluation: Have students report about the peace treaty that will end all wars, or have students write a news report about the best schoolroom, school, country, or city in the world.

An abstract, monochromatic background featuring a variety of organic, rounded shapes that resemble leaves or petals. A thin, light-colored diagonal line runs from the upper left towards the lower right, intersecting the shapes. The overall texture is grainy, typical of a printed page.

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Conceptual Foresight

Penetration

Social Awareness

106

"To set the stage . . . for the steady support of creative manifestations in any child, youth, or adult, our schools should get beyond the dull, the safe, the orthodox. Any excitement lost to our schools will be lost to our communities ten times over."

—George D. Stoddard

"Education, above all, gives us the leisure when young to think about these issues (in world affairs) and to work a lifetime toward their solution. Perhaps, in future, adult education in many forms will give new and extended meaning to the constant search. Every unit of work for work's sake should be matched, and overmatched, by measures of thought and art and brotherhood."

—George D. Stoddard

"We must cultivate talent in the way soil nurtures a seed. It provides for the growth of the seed but it does not tell the seed what to become."

—Sidney J. Parnes

"We are told by one and all to face reality. The question is, whose reality?"

—George Stoddard

"The pressing need today is to educate for an accelerating rate of change . . . Change is so swift that the 'latest thing' today may be old-fashioned by the time young people enter adulthood . . . So they must be taught in such a way that they can learn for themselves the new things of tomorrow."

—John W. Gardner

"What tomorrow needs is not masses of intellectuals, but masses of educated men — men educated to feel and to act as well as to think."

—Charles Silberman

"Since we can't know what knowledge will be most needed in the future, it is senseless to try to teach it in advance. Instead, we should try to turn out people who love learning so much and learn so well that they will be able to learn whatever needs to be learned."

—John Holt

"To construct and to create are quite different. A thing constructed can only be loved after it is constructed, but a thing created is loved before it exists."

—Gilbert K. Chesterton

"AIR POLLUTION"

By Jackie
First Grade

GUIDELINES FOR FORECASTING TALENT

Forecasting Talent: Forecasting events, in the next instant or in the distant future requires conceptual foresight penetration or minute analization of related criteria, and social awareness.

Any prediction or evaluation of future events calls upon forecasting talent. The student must be able to evaluate cause and effect. He needs to consider what he wants to do, what the effects of his actions will be, what consequences he may anticipate.

The ability to forecast is developmental. Training for forecasting talent should include development of the following skills:

Conceptual foresight: What are my goals? Based upon what I now know to be so and what I have done, or has been done in the past, I predict that this will be the result of situations or actions I contemplate.

Penetration: What are the details? What do I know and what do I need to know before acting? How will situations or conditions change requiring an adjustment in my actions or approaches?

Social Awareness: How will other people feel or act? Will change cause disorder or destruction.

Will changes impose unpleasant or unacceptable conditions upon others? How does what I want to do effect the needs of others? Will my behavior be responsible?

Conceptual foresight: Helps students to:

- Establish goals
- Use their present knowledge and background to predict an outcome of a situation
- Think before they act

Penetration: Encourages students to:

- Consider their present knowledge along with things they need to know before acting
- Become aware of how conditions will change with their actions

Social awareness: Helps students to:

- Become aware of others and how their actions will affect others
- Recognize any destruction or harm their actions may cause
- Be sensitive to any actions that would cause discomfort to others
- Become confident with their knowledge as being acceptable

CAUSE AND EFFECT

Talent Development Objective: To develop within students conceptual foresight, penetration, and social awareness by forecasting and evaluating a series of activities.

Teacher Note: You may wish to begin each one of these activities with the divergent thinking approach by having the students list as many possibilities as they can for each situation given. You may then want to converge by having them decide which possibilities might happen in their situation. It is usually best to begin this type of activity orally with group interaction and reinforcement. After doing a

few of the activities a discussion of the value of forecasting skills might be helpful.

Activity: Give the students the following situations:

Your parents decide to adopt a new brother or sister. What are some things that might happen?

You brought a lost animal home with you. What are some things that might happen?

You are seen taking something that belongs to someone else. What are some things that might happen?

You yelled at your mother. What are some things that might happen?

You run into the street. What are some things that might happen?

Your friend asks you to help him with his work all the time. What are some things that might happen?

You didn't finish your homework. What are some things that might happen?

You leave school without telling anyone and someone sees you. What are some things that might happen?

You forgot your boots on a rainy day. What are some things that might happen?

You bump into a teacher carrying a huge stack of paper. What are some things that might happen?

Your brakes failed while driving down the hill. What are some things that might happen?

You wake up one morning and find that you have turned into a rabbit. You can still think as you do now, but cannot talk. How could this change you and what are some things that might happen? How will your condition affect others?

You are sent to the store and while paying for your groceries, you discover you do not have enough money. What are some things that might happen or that you could do?

You are separated from your group while on a camping trip in the mountains. What will you do to stay alive? What are some things that might happen?

You are on the desert in a sandstorm and your leader gets lost. What are some things that might happen?

Your best friend is mad at you. You write your friend a note saying you are sorry and want to make up. What are some things that might happen?

There is a shortage of teachers. Your school, with the same number of students, will have only half as many teachers next year. What are some things that might happen?

Both polar ice caps are melting. What effects will this have on plant, animal and human life?

What things will change and how will it affect the way people live?

In the following situations how will each one affect you and others around you?

- A. You broke your leg.
- B. You are bed ridden for 6 months.
- C. You have become blind.

Activity: Now reverse the process. See how many causes the students can list for each effect given. The only food available was spinach. What are some possible reasons?

School was held 12 months of the year. What are some possible reasons?

You had to eat and live at school. What are some possible reasons?

We no longer had money. What are some possible reasons?

All reading materials, books, magazines, were destroyed. What are some possible reasons?

We had a day when there were no laws. What are some possible reasons?

The power company only worked 8 hours a day. What are some possible reasons?

Everything came in only one color. What are some possible reasons?

We had no teachers and we learned from each other. What are some possible reasons?

Everything was like it was 50 years ago. What are some possible reasons?

The government banned the use of all internal-combustion engines. What are some possible reasons?

You hurry to the telephone and call the police. What are some possible reasons?

There is no more food being delivered to the grocery stores. What are some possible reasons?

Curriculum Related Activities:

Language Arts—Have a student misspell words in a story or an assignment and then have someone else read it.

Math—Have students tell what would happen if they calculated the money wrong for buying a class treat.

Have students tell likely consequences of sudden computer failure.

Science—Ask students to find out why the leaves turn different colors in the fall and fall from the trees. Find out why some plants do this and others do not.

Social Studies—Have class discussion about results of overpopulation, and how we can best deal with increased population.

Art—Have students make posters depicting a problem — such as dead trees lying all over. Ask what was the cause.

Music—Show pictures of people doing folk or social dancing. Ask why are they dancing that way.

Physical Education—Ask students to tell the effects of overeating and not getting enough exercise.

Discuss the effects of poor nutrition.

Evaluation: Give the students this situation: The wage earner (or earners) in your family has lost his job. What happens now?

WHAT WOULD HAPPEN IF?

Talent Development Objective: To help the students develop their forecasting talents through the use of a variety of activities.

Teacher Note: The children will show conceptual foresight by being able to recognize a goal and predict the consequence and results of the goal. Penetration can be determined by how many details a student includes in his goal. Social awareness will be shown when the child realizes the effect his goal has on others.

Present the following activities to your class orally. Responses may be written or spoken. Group and individual work can be used. Remember to accept all responses. Encourage deeper thinking by pointing out the various possibilities of a situation.

Activity: Ask the students to respond to the following situations:

What would your family be like if you had not been born?

Some people say we have too many pets. What would happen if there were no more pets?

What if we had no garbage collectors? What if we had no mailmen? What if we had no policemen?

What would happen if you were a raindrop, a snowflake, a mudball, an old coat, or a new hat?

What would happen if the custodian or secretary didn't come to school for a week?

What would happen if the electricity went off in the school?

What would happen if summer didn't come this year? What would happen if school didn't start next year?

What would happen if this was the last day of school in your life?

What would happen if all the gas stations were closed?

What would happen if there was no more Christmas?

What would happen if the atmosphere of the earth started to thin out.

What would we do if all the present fuel supplies were depleted?

What do you think would happen if man could no longer take food from the sea? Where would we find another food source? What world problems would this create?

Activity: Use true to life social situations as a prediction.

Ask your students what would happen if . . .
a student crowded in line?
you saw a student steal an eraser?
you saw a classmate steal a candy bar?

What are the things you can do to make a new child comfortable in your classroom; in your neighborhood? How would you make a child from another culture feel welcome?

Activity: Use role playing and have the students describe what would happen after the story ended and they were: Goldilocks; Cinderella; The Ugly Duckling; Little Red Riding Hood.

Activity: Show pictures depicting a situation. Have the students predict what will happen next.

Curriculum Related Activities:

Language Arts—Ask students how they would communicate an important news item. Creative writing will often follow a what if . . . discussion.

Math—Ask children to find new ways of expressing mathematical ideas. What if:

1. There were no zero.
2. We had a base 7 number system.
3. Geometry had never been discovered.
4. Einstein's laws of relativity were proven false.

Explore with students the base 10 number system and the possible relationship to man's ten fingers. What if men had 12 fingers?

Science—Select for discussion any physical law or phenomena. Ask students to explore

what would happen if this physical law were inoperable, if there were no gravity, no action-reaction, etc.

Social Studies—Any social situation can be analyzed by exploring an alternate outcome. Examples might be: What would happen if all fathers were housewives and mothers all worked?

What would happen if the losing candidate had, instead, won the election?

Music—Study the structure of musical composition or the kinds of instruments used in the world. Discussions concerning lack of tempo, lack of a conductor, the failure of a composer to be born, or the development of an instrument in some culture other than the one in which it originated can be explored.

Art—Let students produce artistic examples of possible social situations, outcomes, or alternatives.

Have the students draw what the world would be like if there were no green color.

Physical Education—Team problems can be dealt with through a forecasting approach such as the following: What would happen if there were no rules; we didn't take turns; we got no exercise; everyone cheated?

Evaluation: Ask the students: What would happen if they became lost in the woods or the mountains?

TIME IN REVERSE

Talent Development Objective: To help students develop conceptual foresight, penetration, and social awareness by projecting situations in the future or the past.

Teacher Note: The opportunity of assuming that you are actually in another time or another place is one the students seem naturally to enjoy. In depth analysis, however, requires teacher questioning and guidance. Here are some suggested questions that might be used to help student's analyze the past.

1. What would you expect to see that was different?
2. How would your life change?
3. How would you have to change?

Activity: Have students pretend to take a journey back in time. Pretend they are going to live in the time of Robin Hood. Ask students to do the following:

1. Make a list of everything you have learned and all the things you can do.

2. Look over your list. Select from this list those things you feel will be most helpful during this adventure.
3. Plan how you will travel through time.
4. Who will meet you when you arrive?
5. How will you feel? How will they accept you, a stranger?
6. What will you talk about?
7. What will interest you most during your stay?
8. What will you try to change while you are there?

Activity: Choose an historical event or person. Ask students to write a diary telling how they felt and what it was like when:

- (1) They were part of a Spanish expedition as they explored a new land.
- (2) They traveled with Jedediah Smith in his exploration of the west.
- (3) They were a sailor on a Viking ship.

Activity: Ask students to suppose they were

- (1) Suppose you were living in the Middle Ages and you had to prove you were not a witch or a warlock.
- (2) Suppose you could spend a day in Christ's time.

Curriculum Related Activities:

Language Arts—Use written student narratives to explain the past.

Have students interview one another — let each student be a famous person.

Ask students to plan and produce a news broadcast that might have been heard in another time.

Math—Compare systems of weight and measure with students.

Science—Have students select and re-enact moments of scientific discovery.

Present superstition or fallacy such as "bleeding" a sick person. Ask students to devise some method of teaching the people of that time that they are wrong and that there is a better way to help themselves.

Social Studies—Direct students to pretend. Pretend you are What are your problems, feelings, opinions? Some choices might be:

Paul Revere	Marie Antoinette
King Arthur	Chief Crazy Horse
Judas Iscariot	A Sioux warrior
Nero	Gen. George Armstrong
Napoleon	Custer

Ask students to plan and report an historical event from the point of view of both sides. Example: the American Revolution from the colonists, and the colonist loyalist and the English point of view.

Art—Have individuals design bumper stickers appropriate to a given time.

Have students design advertising for an illiterate culture.

Music—Provide examples of music from different periods. Ask students to compare the music to the cultural values.

Physical Education — Have students invent games pertinent to a time past.

Study the development and history of sports.

Evaluation: Have the students respond to the following questions:

1. What will be man's major problems in 1999?
2. What were man's major problems in 1899?

COMPARING PEOPLE

Talent Development Objective: To help students develop empathy and social awareness as they relate to other people.

Teacher Note: Forecasting requires conceptual foresight, penetration and social awareness. While many students are capable of conceptual foresight and penetration they very often lack

the empathy needed for social awareness relating to the needs of others. The ability to compare and to evaluate people is an important leadership ability. Forecasting as to how people will work together, what their needs will be, and how these needs can best be met, involves important social forecasting skills. Such forecasting skills are empathetic and evaluative in nature. Most needed for this type of forecasting is social awareness even though conceptual foresight and penetration are required.

Activity: Direct students to discuss or write about themselves and/or others. Some ideas for consideration are: List all the ways in which you are like the other people in your class. List all the ways in which your classmates are alike or different.

Activity: Consider a specific activity such as teams for a game, a writing group, a study group, a group working on a science experiment or any other small group activity that might be used in your classroom. Ask students to consider the following: What is the nature of the activity? Who, in the class, would like to do this type of activity? What people would work well together? Why did you select those people?

Activity: Ask the students to list all the ways in which animals are alike and different. Ask them to consider wild animals and domestic animals. Discuss the needs of pets.

Activity: Ask students to design or bring in costumes worn by people of another culture or another time. Analyze why people of this age or culture wear this kind of clothing. Ask students to wear the costume for a day and then to write how wearing this costume made them feel and how they would feel if they had to wear this costume all of the time.

Activity: Ask students to discuss how behavior of a group determines what the group will accomplish. Why?

Does the behavior of an individual affect other members of a class? How? Why?

Curriculum Related Activities:

Language Arts: Have students write about people's feelings and needs. What are the similarities?

Have students write advertising slogans for International Brotherhood Week.

Have students write letters to someone in another country.

Have students describe themselves and the way they live.

Math—As a class, establish what you think would be a realistic budget for a family of four. Compare this with real family expenses. Find out how much money a family on welfare is allowed. How would you budget this amount of money?

Set a figure for a student's allowance. How would you spend this amount of money and for what?

What is the cost of drug addiction per day? Where would a person find the income necessary to pay for drug addiction?

Find out how income is related to education and/or job training.

Science—Discuss how likenesses and differences relate to scientific disciplines of study?

Have students plan a zoo. Have them decide what animals they would put together and why?

Study a grazing area. How does the area meet the needs of the animals that must live there?

Social Studies—Set the following type of situation with the class: You have friends who are using drugs. What are their reasons for doing so? What will you do? What will your relationship with the drug users be if you decide not to use drugs when they do?

Compare world cultures and see how they are alike.

Compare family members, how are they alike and different in terms of needs and roles.

Ask the students: What is prejudice? How does it begin? Can it be changed?

Specify a climate. How does climate effect the needs of people?

Specify an occupation. Ask the students how clothes effect the job a person does? Why do some occupations require uniforms?

Why do some occupations require special kinds of clothing?

Art—After discussing the similar needs of people and the likenesses of people, have the students design posters, political cartoons, or advertising slogans aimed at helping people to better understand one another.

Music—Have the students compare musical compositions from different cultures, composers, or ages.

Compare oriental, African and European music. Ask why American jazz is unique?

Study the development of popular music as it relates to society at the height of its popularity.

What makes a "hit" song?

How does cultural dance relate to the needs of people and the cultural patterns of people?

Physical Education—Ask the students how knowledge of the needs and talents of people helps in setting up teams?

How could you encourage someone to do better or to try harder when playing a game?

Why do people play games?

Do games reflect cultural needs? What games are similar to many cultures?

Evaluation: Tell students that one student in the class seems very upset and worried. Have students tell what they could do to help?

JUST PRETEND

Talent Development Objective: To help students develop conceptual foresight, penetration, and social awareness by gaining greater understanding and empathy by practicing projective thinking.

Teacher Note: Asking your students to be someone else or something else helps to free their thinking. It frees them to take a whole new approach or look at the subject at hand. It helps to increase the depth of their involvement. They will discover insights, relationships and dimensions which will increase their understanding and will help them to forecast possible outcomes.

Activity: Have your students pretend they are a roller skate wheel. Ask the following questions: What are all of the surfaces on which you might ride? How would these different surfaces make you feel? Which ride would you like best and why? What would your life be like if you belonged to a child? How would your life be different if you belonged to a professional skater? How would you feel if you were left out in the rain, the snow, the cold?

Activity: Show the class two or three kinds of screwdrivers. Then ask them to pretend they are one of the screwdrivers and ask: In what ways might you be used? How do you feel when you are being used to put screws into a new toy? How do you feel when someone uses you for another purpose such as a lever to help them pry something up, or a hammer, or to mix paint?

Activity: Ask students to "be a library book". Ask them to describe how they feel when a book lover handles them. How does careless handling make you feel? What kinds of book or what specific book are you? Describe in as many ways as you can how you look and what you contain. Convince the class that they should read you.

Activity: Ask students to suppose that they were an old tin can somewhere out in the rain. Relate the greatest adventure in your life as a tin can. What are all of the things you saw or did between the grocery store and where you are now? Draw a map of the route you have traveled. What do you wish you could

have done differently with your tin can life?
What would you like your future use to be?

Activity: Ask students to be a flag. Ask: What kind of flag are you and where are you displayed? Describe some of the events and sights you have seen and how they made you feel.

Activity: Ask students to assume that they have just been inaugurated as President of the United States. Ask the following questions: What do you think are the greatest strengths of our country? What are the problems facing the U.S.? What do you think are the three most important problems that should be given immediate attention? What makes you happy? Sad? What are all the ways and methods you might use to convince the citizens of the U.S. or the world to agree with your point of view?

Activity: Ask the students to describe how they would feel if no one in the class liked them. How would you feel about yourself? How would you feel about school? How would you act in school? How would you treat other people? How could you make other people feel differently about you? What could you do, how would you act, etc.?

Activity: Have students pretend they are in the following situation: You are new to the country and to the school. You cannot speak the language. How does this new experience make you feel? What thoughts do you have about the new school and the new country? What might the teacher do to make you feel at ease? What might the students do to help you? How could others help you to learn the new language?

Activity: Have students pretend to be a big, red ball used on the playground. Ask them the following questions: What happens to you? How do you feel? How would you feel if you were left out on the playground? How would you feel if you were being used in an exciting game? How would you feel if you were thrown up on the roof of the school? How would you feel if you were kicked? How would you feel if you were lost?

Curriculum Related Activities:

Language Arts—Have students write impres-

sions from the point of view of something or someone else.

Have students describe how they think someone else feels when they are angry, sad, happy. Compare their own feelings with their descriptions of the feelings of others. Design protest signs, bumper stickers, billboard advertising or other media advertising from the point of view of a thing. Example: What kind of a protest sign might a lung make? What point might feet try to make in advertising? What might a redwood tree have to say?

Math—Have the students describe what it would be like to be a numeral.

Write story problems as individuals or as a class in which inanimate objects speak or give the facts. Example: I am a fancy new automobile. I have the following qualities and cost this much.

Let them describe how they would feel as a math paper or problem.

Science—Have students respond to the following possibilities. Suppose you were a germ. How would you feel about soap? How would you feel about dirty hands? What germ are you? Suppose you were an atom. Which atom are you? Suppose you were a hurricane, a tornado, a raindrop, a snowflake, or suppose you were water freezing, a snowman melting, or a crystal forming?

Suppose you are the earth and you are having an earthquake in the area of your South America. How do you feel? What is happening, etc.?

Social Studies—Have students select a famous person in a specific situation. Ask them to assume that they were that person and were in that situation, then decide what they would do. Examples: You are a pilgrim; you have just arrived at Plymouth Rock; it is cold and you have to decide what to do first. What would you do?

Suppose you were an Indian child. How did you feel when the first white men came? What did they look like to you? What did you tell your friends?

You are an explorer (name specific). How did you feel when you first arrived at

Art—Ask students to produce abstract designs or pictures which include items important from the point of view of something else. Example: What might you include in a picture showing those things valued by an ear.

Choose an inanimate object for "pop art" designs.

Music—Ask students to consider the point of view of the composer as they perform or listen to the performance of his music. Discuss how the composer tries to communicate his feelings in terms of musical notation.

Ask students to assume they are a musical instrument. Then ask, how would you feel if played well, if mistreated etc.?

Ask students to be a musical selection.

Ask: How would you feel if performed by beginners, if performed by a great symphony?

Physical Education—Students can try to see what it would be like from the point of view of other people, parts of the body, or athletic equipment. Some suggestions might be: Suppose you were never chosen to be on a team. How would you feel? Suppose you were a back. How would you feel if someone were tumbling incorrectly? Suppose you were a bat. What care do you need?

Evaluation: Be someone else. Have students pretend they are their best friend. What things make you happy? Sad? What do you like and dislike? How can your friends help you?

PREDICTING YOUR OWN FUTURE

Talent Development Objective: To help each student develop forecasting abilities, he is asked to describe himself in a future situation.

Teacher Note: The following activities will help each child become more aware of his future problems and situations based upon his knowledge of the present. These exercises will enable one to think ahead and to forecast what might happen. This talent is very important in developing each person's ability to think ahead, to set realistic goals in terms of individual interest, talent, and ability.

Activity: Have the students respond to the following kinds of questions:

When I grow up I would like to be . . .

When I get older I would like to see . . .

What will it be like for me in the next grade . . .

What kind of adult (or parent) would I like to be . . .

What friends that I have now, would I like to have when I grow up . . .

What might I look like . . .

Where might I live . . .

What might my home be like . . .

What style of clothes would I like to wear . . .

What amount of money might I earn . . .

What job would provide that income . . .

If my job requires that I work only three days a week, how will I spend my spare time . . .

What kind of transportation might I use . . .

What things that I consider to be important now, will I want to teach to others . . .

Is it possible for me to make some contributions to society . . .

What things might I do to make me a better person . . .

What preparations can I think about now to prepare me for reaching my goals in the future . . .

Curriculum Related Activities:

Language Arts—Students may discuss or write the following kinds of forecasts. Write a story, poem, newspaper article or descrip-

tion of some event they see as being possible and/or important to their future. Have the students describe themselves as an adult and then write an autobiography of their life.

Math—Discuss with the class the nature of economic change and the need for forecasting both by individuals and by large corporations.

Discuss future construction costs. Have students forecast how much they think it might cost to build a house (specify size), to carpet a room, to support a family of four?

As a class study the stock market. Have students decide upon an investment. Have them follow the listing and graph the information.

Contact an industry. Find out how sales forecasts are made. Have students try to make a sales forecast. Interview industrial personnel if possible.

Have students forecast what their life would be like as an adult if they didn't know how to use mathematical skills.

Science—Ask students to consider discoveries of the past. Discuss some of the unsolved problems of the present.

Forecast as to future discoveries or problems in the scientific world. Some suggestions might be:

What will be the future's most important discoveries in the field of medicine?

How might weather forecasting or earthquake forecasting help people?

Based upon past information, write a weather almanac for the coming year.

Social Studies—Ask the students to study the lives of people they admire (real or historical). What would be considered "turning points" in the lives of these individuals? Ask students to predict at what times, and

if possible, what events might be turning points in their own lives or futures.

Predict as a class or on an individual basis, what occupations or social problems will exist in the future that do not exist now.

Ask the students to describe what problems society has now that will no longer exist in the future. Explain why.

Music—Have students tell how music affects public attitude, individual performance, or mass performance. Ask how music might be used for psychological effect in the future? Have students collect examples of music to illustrate their point.

Ask students to give their ideas about how music of the future will differ from the music of the past or present.

Art—Have students draw a plan of the house they would like to own; the car; etc.

Have students draw themselves twenty years from now.

Choose a committee to illustrate clothing styles of the future.

Ask students what they think high-rise apartments will be like 20 years from now.

Physical Education—Tell the students space in the future will be limited. Ask them how they would change the games we now play so that they would be played in a smaller area. How would the rules be changed?

Ask what future problems might exist for the maintenance of physical fitness? Have students plan a physical fitness program.

Discuss what changes in physiology might we expect in the future? Study changes in the past such as average height, weight, etc.

Evaluation: Have students tell or write about things that are happening in the world today that they think will affect their future.

BY THE YEAR 2000

Talent Development Objective: To increase the students awareness of social situations and interrelations of events as they apply to predictions of the future.

Teacher Note: These activities are planned to involve students in situations that are real and to increase their foresight by making them more aware of our society. Listed below are some situations to present to your students. Make them as real as possible.

Activity: Tell your students they have found they are going to move away from their home but they may choose where they wish to live. Have them decide where they would like to live and tell why they would choose to live there.

Activity: Explain to your class that there is a shortage of food and it is their responsibility to solve the shortage problem and to provide more food for everyone.

Activity: Discuss the price of progress. Then have the students respond to the following situations: What would you do if you found out a machine was coming to your home to destroy it and to make room for a super highway?

How will an increase in population affect the people? What effect will an increase in population have upon cultures and relationships between people? How will an increase in population add stress and friction to society? How could the society be changed to ease the stress and friction?

Ask the students to forecast what and how they would change laws, governments, religious and educational institutions to enable increased numbers of people to function?

Activity: Have the students predict what they think would happen if people could live to be 200 years old?

Activity: Select a committee to list predictions for the new medical discoveries to be made in the next 20 years.

Activity: Have each student make a list of what they or their family could do to help stop

pollution. What are future possibilities for recycling?

Activity: Have your students forecast the types of jobs, laws, and people it will take to help alleviate the poverty in the world.

Activity: Have the students forecast the headlines in the newspaper for the year 2000. List on the chalkboard all the responses received from the class when you ask them questions like: (Use these questions only if your students can't come up with some of their own.)

1. How many people will be earning their living in the year 2000?
2. Who will be our leaders?
3. How will people spend their leisure time?
4. What machines will people use at home, at work, or for travel?
5. What will our country's relationship to other countries be?
6. Who will be our country's friends or enemies?
7. What kind of money will we use?
8. Will we be exploring other lands? Planets?

After several areas have been discussed, divide your group up into various reporting areas, i.e., news, sports, society, etc. Groups can be decided by the class members. Have them write headlines for their section of the paper. From these headlines have another group predict by writing a story that would fit these headlines.

Curriculum Related Activities:

Language Arts—Have students plan and produce the following:

Prepare a preprimer for the year 2000.

Write a poem describing the nature of the future.

Plan a newscast for the year 2000.

Math—Use statistical information to project growth and world needs. Have the students compare population growth and city problems.

Have students predict wages and costs of living in the future.

Have committees plan and draw scale models of a future building or home.

Science—Ask students to:

Write a report, story, or poem describing the lakes and/or oceans of the year 2000.

Design a chapter for a science text book for the year 2000.

List all information that might be obsolete by 2000.

Social Studies—Have students discuss the nature of politics, what kinds of political structures might you expect in the future?

Art—Have students draw any picture show-

ing the future. Include homes, forests, clothing, transportation.

Music—Discuss the meaning of innovation in music.

Have the students analyze music that has been innovative in its time and predict future innovations, compositions, and instruments.

Physical Education—Explore with students the possibilities of new environmental conditions. Have students decide how this would effect sports and recreation. Include limited space on earth as well as life on other planets.

Evaluation: Ask the students to assume they can see into the future. They are all 25 years of age. What will they be doing and what will their lives be like?



DECISION MAKING

LOGICAL EVALUATION

EXPERIMENTAL EVALUATION

INDEPENDENT

"The favorable circumstances (for problem solving) is that the problem should be sensible and meaningful for the learner. By contrast, solutions learned by rote processes or by not-understood formulas are likely to be less well remembered and less satisfactorily applied to new situations."

—Ernest R. Hilgard

"When a person makes creative decisions, he first speculates on what 'might be' from the variety of viewpoints; then he senses and anticipates all conceivable consequences or repercussions of the variety of actions he has contemplated; finally he chooses and develops his best alternative — in full awareness."

—Sidney J. Parnes

"The vast majority of problems or decision situations which confront us daily are those which do not have just one answer. Several solutions are usually possible. Logic suggests that if one can mentally generate many possible solutions, the more likely it is that an optimum solution will be reached. This is a creative process — the formation of new and useful relationships."

—Richard E. Manelis

"There is no more miserable human being than one in whom nothing is habitual but indecision."

—William James

"Not every choice that a child makes is a critical experience, nor is every product of a child's originality a gem. What is important is the process of choosing and the process of producing. Through action comes a confidence by which a child knows that he is free to choose and free to produce his own contribution without threat, censor, or guilt from the environment."

—Harold H. Anderson

"If self-initiated learning is to occur, it seems essential that the individual be in contact with, be faced by, a problem which he perceives as a real problem for him. In our culture we try to insulate the student from any and all of the real problems of life, and this constitutes a difficulty. It appears that if we desire to have students learn to be free and responsible individuals, then we must be willing for them to confront life, to face problems."

—Carl R. Rogers

"SPACE FLIGHT"

By Todd
First Grade

GUIDELINES FOR DECISION MAKING TALENT

Decision Making Talent: Decision making involves experimental evaluation, logical evaluation and judgment.

A decision is a statement of preference or preferred action. The ability to make decisions is basic to living and interacting. People who can never "make up their minds" cannot cope with life effectively. Decision makers, on the other hand, are usually leaders.

To develop decision making talents it is important to understand the decision making process. Real decision making is not just choosing between two predetermined objects or circumstances. Rather it is the careful evaluation of data prior to making a preferred judgment. Decision making training must include:

Experimental Evaluation: How many alternatives are there? What are existing limitations and conditions? Who will be affected? How does what I want or need relate to my decision?

Logical Evaluation: What are the best possible alternatives? What are my main goals? What can I accomplish? What sequence do I follow?

Judgment: In view of the alternatives and conditions and my preferences I decide to or I decide that

Some guides to help you to evaluate decision making activities are:

Experimental Evaluation: Helps students to:

- See all possible alternatives
- Understand all the alternatives
- Recognize the limitations
- Become aware of the existing conditions
- Recognize and appreciate others that will be effected by their decision

Logical Evaluation: Helps students to:

- List all the possible alternatives and then choose the best of the alternatives
- Evaluate each from the list of best alternatives
- Become aware of what can be accomplished by the decision
- Always keep their main goals in mind.

Judgment: After weighing all possible alternatives, help students to:

- Arrive at a decision
- Have alternatives or change of direction in mind
- Act according to the decision

In training for decision making you must help students to: (a) discuss the situation; (b) examine all possibilities or arguments for and against; (c) give weight to arguments presented or expressed; (d) come to a conclusion and be able to (e) defend or support their decision as the best decision according to their logic and evaluation.

WHAT IS YOUR IMPRESSION?

Talent Development Objective: To help develop experimental evaluation and judgment by helping students evaluate first impressions.

Teacher Note: Your first impression is based upon:

- What you know
- Your past experiences
- How you feel at the time
- Your emotional involvement with the situation

This is an excellent exercise for children to help them see how past experiences and values affect each person's impression of specified circumstances. Discuss how first impressions might be invalid; how people might jump to conclusions; how snap judgments might be made; and how they might be correct and incorrect.

Activity: Read the following statements. Have the students write or tell what they think has happened.

The black and white car drove slowly down the dark street.

The red light went on and off, on and off, on and off.

The toys were all in the middle of the room.

The man was on the grass.

The child was crying.

The lady was waving her arms.

Activity: Have the students write a one sentence statement. Example: My bicycle has a flat tire. Turn the paper over and write what has happened. Pass the one statement sentence to someone else. Have them read your statement and write underneath what they think has happened. Compare the two statements.

Activity: Have the students stage a fight, an accident, or an interaction between people that the children can observe. When the situation is over ask the children to tell what they saw.

Activity: Have the students stage a mock trial based on prearranged evidence and testimony. Have the students decide what the verdict or legal decision should be.

Activity: Have students look at a broken item (window, cup, pencil, crayon). Have them decide what happened.

Activity: Show a picture. As a class, study the picture and discuss what happened.

Activity: Have students draw a picture. Have them give it to a friend and have them write a story or tell a story about their picture.

Activity: Have students write endings to open-ended stories. Then, have the students write what happened in the beginning. Example: Write the beginning . . .

. . . the family decided to change their plans so that everyone could have a chance to share in the way things were done.

. . . so all the children put their books away, lined up and went to see what had happened.

. . . she began to cry and all of her friends told her that it really didn't matter. The way people acted and the way they felt on the inside was the thing that counted.

Activity: Have students write story endings. Let another student write the beginning.

Curriculum Related Activities:

Language Arts—Have students write newspaper articles or devise a newscast that tries to prevent an unbiased report. Have students analyze news reporting.

Math—Have students use statistics to help enforce a point of view.

As a class, study several kinds of graphs. Have students decide how graphs help to communicate meaning.

Science—After watching a science experiment with no previous explanation, have students explore all things they think might have caused the action.

Have students look for wrong impressions or incorrect conclusions in science.

Have students try to explain the difference between fact and theory.

Social Studies—Have the students give their impressions about what happened before an argument started on the playground.

Have the students collect and bring a variety of advertisements. What impressions do the advertisements make?

Art—Have the students use color and design to convey mood and action. Evaluate the effect of color.

Have students draw their impressions of the color of love.

Show children examples of modern art. Have them react and give their first impressions. Read about the painting and see if this changes their preconceived ideas.

Music—Have the students discuss the relationship of music and mood. Ask students to tell how or when they think music effects emotions.

Physical Education—Ask this question: What is popularity? Encourage students to analyze how a team creates an impression so that the crowd or the public will react favorably or unfavorably? Have the students role play and then discuss how actions

make them feel. Compare slow, easy movement and active agitated actions.

How is dance used to create mood? Have students create dance movements and have other children respond by guessing the particular emotions or situation the dancer is trying to express.

Evaluation: Tell the students that a new substitute teacher may take over the class next week. The new teacher will evaluate each student at the end of her first week. Ask students to imagine and write what they think their own evaluation might say.

DECIDE WHAT OR WHY

Talent Development Objective: To help students develop experimental evaluations, logical evaluation, and judgment, by making decisions as to what they would do or what others should do in a variety of situations.

Teacher Note: These kinds of activities include the whole decision making process. Children will experiment with different points of view, logically evaluate on the basis of their experimentation and form a logical judgment.

Activity: Ask your students to describe the attributes of a friend. What kind of people do they like to be their friends? What is the difference between a best friend and some other person? How does a new person become a best friend? What would they do if they wanted to become someone's best friend? Why do friends fight? How can friends make up? Should they say they are sorry if they are not? Have students write rules that would help them to be a better friend.

Activity: Tell your students to think of their future. What kind of a person do they want to be when they grow up? Why did they make this choice? What will they then have to know or what will they have to learn to enable them to reach their stated goal? If this is the case, on what changes in their behavior, their attitude, their education will they have to work.

Activity: Ask your students to think about the reasons for war. What sorts of things do they think cause difficulties between countries? At what points do disagreements develop into hostilities or into wars? At the point of conflict what might countries do to avoid wars? Are

there alternatives to war? Do they think wars solve problems?

In an atomic war with Russia, if our country did win, what problems would be solved and what problems would arise? In weighing the problems created and the problems solved, what conclusions can they make concerning atomic warfare.

Activity: Should censorship of TV, movies, radio, etc., be allowed? Ask students to consider whether parents should censor what their children watch on television? If yes, what should they use to help them choose what is good and bad? If no, why should complete freedom of choice be allowed? Do their parents censor their television time? Might there be other reasons for not allowing children to watch anything they want anytime?

Do your parents impose any standards upon your tele-viewing?

If you were a parent, would you impose any standards upon young children?

Would you change the viewing rules to fit the different ages of different children?

Is censorship of television ever good? Is it ever bad? Could anyone ever effect the kind of programming on the air? How, when, and why?

Activity: Ask students the following questions:

1. Why did you wear the clothes you have on today?
2. What are all of the things that might influence your decision? To help encourage thinking ask about fads, coloring of clothes,

cleanliness, color combination, seasonal problems, mother's direction, friend's influence, country, community, what people expect you to wear, culture, your own taste.

3. What do you think were the most important reasons for your selection of clothes today?
4. What should you consider when you dress each day? What consideration must you make in terms of your family, and their income, and the needs of others in your family unit?
5. Why did you make your decisions?

Activity: Why are there laws or rules?

1. What is freedom under the law? Why are rules necessary?
2. What would your life be like without law? In an orderless society, which of the freedoms that you now enjoy would be most endangered? How could you maintain your freedoms in an orderless society?
3. What are the most important things involved in helping people live and work together in a primitive society, in an island society, in our society?
4. Write a short set of laws or rules necessary to maintain society.
5. Why do you consider rules necessary?

Activity: Have the following discussions with the class:

1. In a democracy people live by majority rule. What if a member of the minority strongly disagrees with majority decisions on moral grounds. To what extent is he bound by his conscience and to what extent the law of the land? What if you had lived in Hitler's Germany? What if you are a member of a minority? How might you act or react in terms of your conscience and the law of the land?
2. What are your responsibilities as an individual if you disagree and feel a law or an action is incorrect? How can people effect change in a democracy?
3. What could you do to change a bad law or a bad social action?

4. Is your way the best of all possible ways? Why or why not?

Curriculum Related Activities:

Language Arts—Ask students to decide what or why on any given issue. Then plan and present a debate, a newscast, a documentary film or presentation, a newspaper story or an essay.

Math—Ask students to explain what happens in an arithmetic process and why the answer is correct or incorrect. Have students write story problems of their own in which they decide what information is being sought.

Science—Encourage students to analyze why and how evaluation of scientific phenomena has led to new discoveries.

Social Studies—Decide what was the real reason for an historical event. For example: What really caused the American Revolution, Civil War? Why was Columbus' voyage really significant?

Why has Christianity survived?

Art—Examine abstract art and sculpture. Ask students to give their impressions.

Have students make cartoons of animals. Encourage them to decide which characteristic of a particular animal makes it different from other animals. Exaggerate this in the drawing.

Music—Ask students questions such as: What music do you prefer? Why? Why do individual's taste in music vary? Why do tastes in music change from one era to another?

Physical Education—Use a what and why approach to determine the best way to play a game, encourage participation, increase skill, settle disputes, etc.

Have children choose or invent an exercise or stunt for other children to follow. Let them decide which muscle of the body will be strengthened by this particular exercise.

Evaluation: A toy manufacturing company has just been turned over to you. How are you going to determine the types of toys you are going to produce?

WHAT IS YOUR CHOICE?

Talent Development Objective: To help students make aesthetic choices thus developing experimental evaluation and judgment.

Teacher Note: This exercise is designed to help the student become more effective in making choices. The students should be given many chances to select and defend their choices. With experience, the students will probably make more mature selection.

Activity: Have the class listen to a variety of musical selections which might include classical, jazz, semi-classical, or rock. Have them listen specifically for patterns, melody, accentuation, uniqueness, instrumental combinations, variety of sounds. Then have students choose the recording that was the most interesting or pleasing to them. Have them give reasons for their choice. Then ask the following questions:

What feelings did you have while listening to each of the recordings? What did each of the recordings make you want to do—paint, dance, fly, cry, laugh, make rhythm, etc? Why?

What things did you picture in your mind while you were listening to each selection? Why?

Using the media of art, creative writing, poetry, dance, etc., have the students express their feelings about the music they chose.

Activity: Show several famous paintings to the class. Have the children choose the painting they would prefer to have in their own home and tell why they chose it.

Activity: After studying different geological locations, ask students where they would like to go for their summer vacation and why. Or, have students list all the places they have been on summer vacations and then choose the one they liked the most and decide why that vacation was the best.

Activity: Play a recording such as Debussy's "Clair de lune" or "Prelude to the Afternoon of a Faun" while children are fingerpainting. Allow them to share their creations and tell why they drew what they did. See if each person can

tell why their fingers made the motions they did.

Activity: Have the students study and compare shapes of leaves and sizes of trees. Have students choose a tree that they would like to be and tell where they are growing and why they chose to be that particular tree. Go on a nature walk and look at the different trees, shrubs, flowers, and have students choose the ones they would prefer to have planted in their yard. Tell why.

Activity: Have the students choose three colors from their crayons or water colors. Instruct them to paint a picture using only those three colors. After the painting is finished have them decide on other combinations to try another time.

Activity: Have students write all the things they like about school. Have them give reasons why they chose what they did.

Activity: Have the class pretend they are in a big new shopping center with all kinds of new stores. Have them write down five things they would like to buy. See if they can give reasons for selecting the things they did. Next, tell the class they each have \$5.00 to spend in that shopping center. What would they shop for? Would they choose to spend the money on one thing or would they like to buy as many things as they could with the money? Have the class share ideas and decide as a class who made the best buy.

Activity: Have students put their heads on their desks with their eyes shut while they listen to a chord played on a musical instrument. Then have them listen to a discord played on the same instrument. Have the students tell or write all the feelings they had when a regular chord was played and then have them write or tell all the feelings they had when a discord was played. Have students relate to pleasant singing voices and shouting. Have students relate this activity to instruments played incorrectly.

Activity: Arrange for the bandmaster to give younger students a demonstration with his

band students to acquaint the non-band students with the different kinds of instruments. Have the students give their impressions of the different instruments. Have each student decide which one they might like to learn to play.

Curriculum Related Activities:

Language Arts—Have students decide which kind of a reporting method or what type of media could best describe a news event.

After evaluating several books or stories, ask students to select their favorite and write or give a book review.

Math—Have the students decide what they would like to buy for Christmas and how they might get the money.

Set up a family budget and then decide how they could earn enough money to meet that budget.

Have students set up a budget for themselves and decide how they could earn the money they need.

Have the students decide what they would do with \$10.00 if it were given to them.

Science—Ask students what in their opinion was the world's most important scientific discovery? Why?

What is the most important discovery in a particular scientific field? Why?

Choose the best way to prove a scientific principle. After students have made decisions, have them give their reasons for making their decisions.

Social Studies—Have students choose to be a statue or a national shrine. Ask them to give reasons for their choice.

Art—Have students decide upon an item (food, flower, or color) then have them design posters attempting to show their point of view to others.

Music—Have students select a favorite composition or form of musical expression. Have the students give reasons for their selection.

Teach children to distinguish high and low tones by playing single notes on a piano or tone bells. Have them decide whether a note is higher or lower than the last note heard by having students raise and lower their hands.

Physical Education—Allow students to select a favorite activity, game or dance and try to convince the other class members that this activity should be used for a class period.

Evaluation: Ask the students to choose their favorite adult besides their parents. Have them give their reasons for choosing this person.

DECIDING

Talent Development Objective: To give the student opportunities to make decisions, evaluate their decisions and make a judgment as to why a decision was made.

Teacher Note: Decisions are based upon judgments and evaluations. Good decisions require evaluation of past experiences, present needs, and judgments as to the demands of the future. Before complex decisions can be made, students need experiences making and evaluating simple decisions. They need to develop pride in their ability to take a stand based upon their own needs and judgments.

Activity: If you could be any kind of an animal, which would you choose to be? After each student decides, have each list or tell all of the reasons they can for making this particular animal their choice. Then write or tell a story pretending they are the animal. Convince others that they had a good time being that animal.

Activity: Have the students draw a picture of an animal they would like to be. Write or tell a story about their picture.

Activity: Have students combine parts of animals and invent a new animal. If they could be a

perfect animal, what traits from other animals would they like to have?

Example: Run like a deer
Eyes like an eagle
Fly like a hawk
Think like a man, etc.

Ask what would the invented animal look like?
Have them give the newly invented animal a name.

Activity: What community helpers are most necessary for the smooth functioning of our community. Why? Choose a community helper; draw a picture of him doing his job, tell why he is important.

Activity: Which professions do they think are more important to society . . . doctors, teachers, lawyers, scientists. Ask the students to give reasons for their choice.

Activity: If you could have one pet, what pet would you choose? Why? Have students pretend to be the pet of their choice. Then ask them to tell how they would like to be treated.

Activity: Suppose you were a (put in the name of any animal or any person). What things would be important to you? Why?

Activity: Suppose a great famine, or any disaster, came to this country. Where do you think would be the best place to live (in the city or country in mountain or plains, etc.)? Have students give reasons for their choices.

Curriculum Related Activities:

Language Arts—You are an animal. Write a story from the point of view of an animal in the zoo; in the jungle; or in a forest. Write poetry describing how an animal feels; what makes him happy. Write a diary of the life of an insect.

Math—Have students select a number. You are that number. In how many ways might you be used during a day?

Have students state a wage they would like to receive at their age. What would they do with their money? Is it a reasonable wage?

Science—Direct students to choose any living or non-living thing within a given category. Explain and defend their choices. Choose to be a plant, a rock, a bird, an insect, an atom, etc.

Social Studies—Have students discuss which famous person in history they would like to be; in which country or period of time they would like to live. Have students explain their choices. Such a decision could be simple or complex.

Art—Ask students to illustrate any previous choices made in the above activities. Let them design advertisements that will convert someone else to their point of view.

Music—Ask students to select their favorite kind of music based upon the assumption that they will be part of a group performing this music.

Have students choose to be a composer. Have them explain their choice.

Have students choose to be an instrument. Explain their choice.

Physical Education—Portray animals in relay races.

Have students choose to be a piece of sporting equipment. Tell how would you like to be treated.

Evaluation: Ask the students to evaluate why humans must care for so many animals today when at one time animals cared for themselves.

WHERE CAN I LIVE?

Talent Development Objective: To help the student develop logical evaluation and judgment by making a variety of decisions concerning plans where people live and work.

Teacher Note: Decision making is a process that requires evaluation of possible choices, selection of the best possible choices through logical reasoning and then making a decision on

the basis of the best possible answer for the individual.

Given a specific set of instructions or conditions, such as geographic location or historical setting, make some decisions related to adaptation and survival. Decide:

What you would do . . . ?

What you would need to change . . . ?

How you would adapt or change yourself . . . ?

All possible alternatives that you would have to consider; i.e., climate, weather, resources, etc. . . .

Activity: Ask students to make decisions based upon the following questions:

If you could move anywhere in the world, where would you go?

Why would you select that spot?

How is the new place you choose different from the place in which you are now living?

What materials would you use to build your house? Why?

Where, in this new place, would you build your home: on a mountain, lake shore, ocean beach? Why did you select the spot you did?

Activity: Have students think of a perfect house, or bedroom, or school room. What would you change to make your house perfect? Why would you make that change?

Activity: Ask students the following questions:

What would you do if all the world's electrical power ceased to function? How would you have to change the way you live?

How would you feel if the snow storm or rain should not stop?

How would you feel if you were an early pioneer? Where would you choose to establish a new settlement? Why?

How would you feel if you were an explorer of the planets of the Solar System? Where would you put a new "out-post"? Why did you select that particular spot?

Activity: If you had to live in the arctic, or the jungle, or a rain forest, what new invention would make your life most comfortable?

Activity: All of your friends have decided to live in a hippie commune. Would you choose to join them — to live in this kind of an environment? Why or why not? Suppose they felt that the taking of drugs was good and important and you did not agree. What would you do?

Activity: Suppose you could change your school room and put your desk any place in the room. Where would you move it? Why?

Activity: If you could change just one thing about yourself, what would you change and why?

Activity: Suppose you could change your school? What one thing most needs changing; how would you make the change? Have students give reasons for their decisions.

Curriculum Related Activities:

Language Arts—Describe in poetry or story form, the ideal place to live. Have students decide which books they would choose for their home library? Have students find all the books they can that tell about homes of people or animals.

Math—Have students select the carpeting, drapes, and furnishings for their home and calculate the cost. Select carpeting for a school room and figure costs.

Science—Have students consider the different climates in their country or the different kinds of soil and water conditions; then have them make a decision as to which climate or soil conditions they prefer.

Social Studies—Study the homes of children around the world and then let the students decide upon a country in which they would like to be an exchange student. Have students give reasons for their decisions.

Have students pretend to be an Indian child of long ago. Specify time, tribe, and conditions. Ask them how being this Indian child would change the way in which they live? Compare life as an Indian child with life as a child in our modern society.

Art—Have students draw the animal home they think is the most interesting.

Have students decide what type of a stereo

system they would like to build in their home.

Physical Education—After the students have decided where or how they would like to live, have them decide what sports would be appropriate in that place or time and what kind of facilities they would like or expect to have close to their home (tennis

court swimming pool, golf course, ski resort, boating facilities, bowling alley, open field, jousting arena, etc.).

Evaluation: Give the students this situation: Your family is going to move to Helena, Montana (or some other place). What decisions should be made and what should be considered?

WHAT IS THE BEST SOLUTION?

Talent Development Objective: To help students develop experimental and logical evaluation by working with problem situations.

Teacher Note: This exercise is designed to help children learn to make simple decisions. Much praise should be given for being able to make up their minds about something. Don't try to lead students to what you consider to be the best solution. In leaving the solution open, you help students to experiment with ideas, evaluate their ideas in terms of what they know, and judge the effectiveness of their ideas. Set the stage by providing a situation that could call for more than one specific solution (often problems or situations new to students will be most effective). Be sure to define the situation and be willing to answer any questions that are asked for clarification.

Activity: (Lower grades) Have the students put their crayons on top of their desks. Then ask them to choose one crayon and hold it up for:

the best color for an apple
the best color for hair
the best color for skin
the best color for night
the best color for happy

Accept every child's choice. Give praise for just holding up the crayon.

Activity: Select a weather condition. Have the students think about all of their clothing and draw the best thing to wear for this weather.

Activity: Have the children project themselves into the following situation or other similar

situations: Someone sits next to you, they keep talking to you and you can't get anything done. What can you do?

Activity: Have the students pretend they are an Indian child and must move with the tribe to better hunting grounds. They can take only what they can carry. They will be walking for several days. What will they take with them?

Activity: Have students imagine that they are being forced to move with their family to a desert island under these conditions: You will have all of the food and materials you need but your reading material will be limited to just ten books. Since you will be out of touch with anyone else for at least 20 years what ten books will you choose to take? You may take any size book, but only ten.

Activity: Have each student plan and stock an underground shelter for their family.

Activity: Tell students only one television program will be broadcast at a time. There are only six hours per week when any television will be seen. What programs would they select?

Activity: Individually, or in groups, have students make a list of the most important people to be included in a world wide peace conference. Discuss reasons for these decisions.

Activity: Have children project themselves into this situation: You are on the moon. You and your companions have just completed your last moon walk. All samples have been collected and you are just getting ready to return to your space craft. Suddenly, all communica-

tions with Earth are lost. Since all your plans for lift off and re-entry depend on computer information from Earth, you are now completely on your own. You have many problems as you view the situation. If you wait, you use up precious oxygen needed to support life. All of your communication systems are operable. The problem must be from Earth. You do not have many minutes in which to make a decision as the exact instant for lift-off cannot be delayed. You are an astronaut, you are in charge, you must decide what to do, when to act, and how to act, keeping the greatest safety of the greatest number in mind.

Curriculum Related Activities:

Language Arts—Have students make decisions as to why certain literature was written. During reading have children decide which word attack skills or rule applies in certain words. Explain why.

Math—What type of logic should we use in solving story problems?

Science—Have students choose, prepare, and perform individual science experiments for the class. Class members decide what happens and why.

Social Studies—Ask students what is meant by cause and effect in human relationships — constant and logical.

Have children suppose that their family is moving west in a covered wagon. Space is limited. What will your family need to take? What things of your own will you take? (choose only three) Let children list all choices and then narrow their choices as they evaluate and decide.

Art—Have students make decisions as to the appropriate colors to use when painting a particular seasonal scene.

Illustrate any of the other activities in the exercise.

What colors could best be used to illustrate happy, angry, or sad?

Music—Have students choose music that would be appropriate for certain events — i.e., background for a play, art fair, sports movie, art lesson or choral reading.

Physical Education — Have students look through physical training books and have them choose exercises to teach younger children exercises for specific skills, etc.

Evaluation: Give students a problem situation (relate to student level). Have students make individual decisions as to how the problem should be solved. Have students supply five reasons as to why their decisions were made.

WHAT CAN IT BE?

Talent Development Objective: To help develop experimental evaluation through the use of unfamiliar vocabulary.

Teacher Note: Students are often asked to decide what something is or what something means. Students need to experiment with possible meanings, evaluate the logic of the possibilities and judge the best possible choice. These abilities are important to the learning process especially as students hear language, learn language, and develop language skills.

Activity: Write the word SNERFOIL on the board. Explain that the word has no meaning. We

need to invent a meaning and give reasons for the meaning we have chosen.

SNERFOIL . . .

What does it mean?

Is it a thing or an action?

Use the word in a sentence.

Tell a story in which you use your new word.

Encourage students to invent other nonsense words and decide what they might mean. Write or tell stories in which the new word is used.

Activity: Use a nonsense word in a sentence. Have students decide, on the basis of the word usage, what the word means.

Example: The **crift** is under the table.

He is crifting the ball.

The girl was taking a crift lesson.

What does the word mean? How did the word "A" used in the sentence give you a clue?

Activity: Give nonsense directions. Ask students: What would you do if someone told you to:

Flumwit with a farple.

Put the grichit on the stark.

(Note: Many terms or directions given to children use words unfamiliar to the students. Activities, such as these, help children understand the communication process on a deductive level.)

Activity: Make sentences using real, but unfamiliar words to students. Have students decide what these words might mean.

Activity: Draw a red horizontal line bisected by a blue vertical line, making four equal areas. Place snowflakes, alphabetical letters, or numbers at various points in the areas. Say, "I have chosen a snowflake and you may guess which one it is by asking questions which can be answered by yes or no.

Example: Child might ask . . . is it at the top? Is it at the left top? Is it touching the red line? etc.

Questions continue until position is identified.

Curriculum Related Activities:

Language Arts—Have students collect old English spelling and sayings. Try to determine what they mean. Let students try to locate real words the class members don't know. Use the words in context or play

"20 questions" until class members can define the new word.

Give nonsense spelling words emphasizing blends and vowel sounds. After checking, have students use the nonsense word in a sentence.

Math—Have students learn and discuss the specialized language of a mathematics discipline. Have student write a problem and invent a new word to describe the arithmetic process.

Science—Have the students invent words. Invent names for plants or animals that are descriptive of that plant or animal. Compare to real Latin names.

Social Studies—Have students find the origin of first name and sur-name. Have each student find out what his name means. Have students select a new name that describes themselves such as an Indian name.

Art—Using an imaginary nonsense word, have students draw what they think the word is.

Music—Have students make up titles to musical compositions. Learn some of the technical words relating to music study.

Physical Education—Ask students to invent a new name for a game, invent names for the player's positions.

Have each student devise and name a new exercise and teach it to the class.

Evaluation: Have each student create a new animal that could live in their geographical area and which would be useful to man. Have them name, decide, and describe all of the characteristics of this new animal.

LESSON PLAN EXAMPLE

Objective: To help children plan and participate in a creative activity using finger paints in combination with unusual objects that will produce texture and design: to increase communication skills while labeling and discussing painted productions.

Teacher Note: Vital to the creative process is the ability to combine seemingly unfamiliar items or situations in such a way that a problem can be creatively solved. It is this ability to combine and recombine ideas that contributes to the development of children who are fluent, flexible, original, and creative problem solvers.

This lesson plan was written by a first grade teacher. It is important to note that WHEN A DISCUSSION QUESTION WAS ASKED, ALL STUDENT RESPONSES WERE DISCUSSED, rather than just those ideas held to be important by the teacher.

Use questions to stimulate thinking. The order of questions is not important, the thinking on the part of the student is. Use the questions suggested in the lesson plan as well as questions of your own to help students to become creative problem solvers.

Materials Needed: Wheat paste or liquid starch, powder paint, pre-cut heavy paper, towels and wash cloths, paint shirts, newspapers to cover table, gadgets such as lids of all sizes, cut piece of cane, blocks, wide tongued fork, comb, etc.

PRIOR TO PAINTING

Talent and thinking areas stressed would be:

Learning How to Plan

Making Decisions

Thinking Things Through

Forecasting

Teaching Procedure: Use questions such as the following to stimulate student thinking and involvement.

Does anyone know what a gadget is? What do you think it could be? Discuss, evaluate responses, define the word.

How many of you have done finger painting before?

Tell us what you did, how you did it, where you did it.

Finger painting means painting with fingers, but we don't have to use our fingers only. How else could we paint? What gadgets would be fun to use?

Let us call our painting "gadget painting" rather than finger painting.

What will we need if we want to gadget paint? Chart student responses as to materials. Where will we work? How will we prepare our work space?

Chart final suggestions as part of the work plan. With whom will you work and how will you decide? Would you like to have music while we paint? Why or why not?

If students decide to have music, what kind of music would you like to hear?

Who can bring records from home?

Who can bring gadgets from home?

Chart those who will help with materials.

How can we each help to make the painting day a successful day?

Chart student responses as behavioral guidelines.

PAINTING DAY

Talent and thinking areas stressed would be:

Planning

Evaluating

Reviewing Procedures

Decision Making

Preparation of Materials: Be sure to have wash cloths and towels ready. Have finger paints mixed and ready to use. Have heavy paper pre-cut. Have enough paint shirts available. Have newspapers for table and gadgets ready.

Planning Review: Review the plans by asking questions such as:

What are we going to do?

What are some rules that you have suggested that we will have to remember if this is to be a fun day for everyone?

What will you do when your painting is done?

How will we clean up?

Decision Making: Everyone must make a decision. Each of you must decide what color you will use. Choose the color you would like to use for your gadget painting. The choice of colors depends upon what colors you as the teacher have made available.

Forecasting: Look at all of the interesting gadgets we have collected. Which one do you **think** will make the most interesting design? What gadgets will make something look rough or textured?

What gadgets do you think will form an interesting shape?

ACTIVITY GADGET PAINTING

Talent and thinking areas stressed would be:
Creativity Divergent Thinking

Communication of Ideas and Experiences

Teaching Procedure: Converse with students as they paint. Encourage them to think by asking questions. Tell students to be creative and to experiment. Show them how to erase and then how to start over. Here are some questions and directions that will encourage them to explore and to create.

Paint with your hands, use your fists, your elbows, one finger, more than one finger, the side of your hand, both hands at once, one hand, only your palm. Think of a new way to paint with your hands and arms.

What do the patterns remind you of?

Use some gadgets to help you to make patterns and designs. Choose what you think looks interesting?

Did the gadget make the kind of a design you expected?

What design or pattern do you like best?

Where would you like your picture displayed when it is done?

Evaluation, Individual:

What do you like best about your picture?

What do you like best about the color or colors you decided to use?

How does your painting make you feel?

Evaluation, Group:

What did you enjoy about gadget painting? Did we have any problems? Discuss behavior without mentioning names!

How could we improve it next time?

How did you feel while you were gadget painting?

Did the music (if it was used) help you? Why or why not?

DESCRIBING AND NAMING THE PICTURES

Talent and thinking areas stressed would be:

Creative Convergent Thinking Evaluation
Communications

Teaching Procedure: Encourage the students to discuss their own paintings and the paintings of others. Ask them to tell what they see that is interesting, what is unusual, what does it make you think of, what do they like about the painting? Some of the students might like to tell how they produced a certain effect.

Discuss a title, turn the paper all directions so students can see it at different angles, and then ask each student or class to tell what the picture looks like. The titles need not be specific, but will probably describe impressions such as balloon in the air, rolls of ribbon, etc. Some other language art experiences might include writing a story or a poem about the painting.

Forecasting can be encouraged by asking students if their title would change had they used another color.

Display gadget paintings and title where the children can enjoy seeing and reading about their creative productions.

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